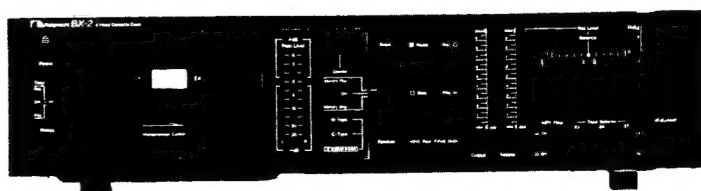




Service Manual

Nakamichi BX-2

2 Head Cassette Deck



CONTENTS

1.	General	1
2.	Mechanical Adjustments	2
2. 1.	Tape Guide Height Check for Record/Playback Head and Erase Head	2
2. 2.	Head Base Stroke Check	2
2. 3.	Record/Playback Azimuth Alignment and Height Check	2
2. 4.	Pressure Adjustment of Pressure Roller	2
2. 5.	Tape Travelling Check	2
2. 6.	Eject Damper Adjustment	2
2. 7.	Reel Motor Speed Adjustment in Play Mode	3
2. 8.	Tape Speed Adjustment	3
2. 9.	Lubrication	3
3.	Parts Location for Electrical Adjustment	3
4.	Electrical Adjustments and Measurements	4
4. 1.	Adjustment and Measurement Instructions	4
4. 2.	Dolby NR Circuit Check	6
5.	Mechanism Ass'y and Parts List	7
5. 1.	Synthesis	7
5. 2.	Synthesis Mechanism Ass'y (A01)	9
5. 3.	Mechanism Ass'y (B01)	11
6.	Mounting Diagrams and Parts List	13
6. 1.	Power Switch P.C.B. Ass'y	13
6. 2.	Pin Jack P.C.B. Ass'y	13
6. 3.	Volume P.C.B. Ass'y	14
6. 4.	Dolby NR Switch P.C.B. Ass'y	14
6. 5.	Indicator P.C.B. Ass'y	14
6. 6.	Timer Switch P.C.B. Ass'y	14
6. 7.	Control Switch P.C.B. Ass'y	14
6. 8.	Shut-off P.C.B. Ass'y	14
6. 9.	Counter P.C.B. Ass'y	14
6. 10.	Main P.C.B. Ass'y	16
7.	Schematic Diagrams	19
7. 1.	Attention to Servicemen	19
7. 2.	IC Block Diagrams	19
7. 3.	Schematic Diagrams	20
8.	Timing Chart and Eq. Amp. Frequency Response	22
9.	Wiring Diagram	24
10.	Block Diagrams	25
11.	Specifications	26

1. GENERAL

1.1. Voltage Selector

Voltage selector is installed on the rear panel for Other version of the Nakamichi BX-2.
This voltage selector can select either 120 V or 220-240 V at customer's disposal.

1.2. Parts List for Carton and Packing

Part No.	Description	Q'ty
OF03673C	Carton	1
OF03674A	Packing	2

1.3. Serial Number

The BX-2 has two versions, Silver and Black.

In the service manual, serial numbers of these versions are identified as follows:

Silver version: A316xxxxx

Black version: A317xxxxx

However, the actual serial number on the serial number plate of the BX-2 is indicated as A316.7xxxxx.

The serial number begins with A316.701001.

2. MECHANICAL ADJUSTMENTS

2.1. Tape Guide Height Check for Record/Playback Head and Erase Head

With use of an M-300 produced by Information Terminals, tape guide height check for the Record/Playback Head and Erase Heads shall be made, wherein a small block shall be pushed straight down to the base while in use of the M-300. Refer to Fig. 2.1.

(1) Record/Playback Head Tape Guide Height

- (a) Load the base of the M-300 carefully, then set the cassette deck in Play mode.
- (b) Place the small block of the M-300 on the base.
- (c) Slide the small block against the tape guide of the Record/Playback Head, and check to insure that the block is accepted by the tape guide.
- (d) If not, loosen the screw and insert a shim (either 30 μ m (0C80048A), 60 μ m (0C80038A), or 100 μ m (0C80039A)) to raise the Record/Playback Head, then tighten and apply a quantity of lock tight paint to the screw.

(2) Erase Head Tape Guide Height

- (a) Load the base of the M-300 carefully, then set the cassette deck in Play mode.
- (b) Place the small block of the M-300 on the base.
- (c) Slide the small block against the tape guide of the Erase Head, and check whether the block is accepted by the tape guide.

2.2. Head Base Stroke Check

Refer to Fig. 2.2.

- (1) Load the base of the M-300 carefully, then push the base toward the Record/Playback Head to eliminate the clearance between the reference pin and the base.
- (2) Set the cassette deck in Play mode.
- (3) Place the small block of the M-300 on the base.
- (4) Contact the small block with the Record/Playback Head surface and the Erase Head surface, and check whether the end of the small block is located within the specified tolerance as shown in the figure.

2.3. Record/Playback Azimuth Alignment and Height Check

Refer to Fig. 2.1.

- (1) Connect a VTVM to the Output Jacks.
- (2) Load a 15 kHz Azimuth Tape (DA09004A), then set the cassette deck in Play mode.
- (3) Turn the Azimuth Alignment Screw until the outputs of both channels become maximum.
- (4) Load a 1 kHz Track Alignment Tape (DA09007A), then set the cassette deck in Play mode.
- (5) Check to insure that the readings of both channels on the VTVM are below -25 dB.
If not, replacement of the Record/Playback Head will be required.
- (6) Apply a quantity of lock tight paint to the Azimuth Alignment Screw.

2.4. Pressure Adjustment of Pressure Roller

Refer to Fig. 2.3.

- (1) In Play mode, measure the torque of the Pressure Roller and check whether the torque is in a range of 320 ± 50 g-cm.
- (2) If torque is out of the range, correct it by changing the installation point of the Pressure Roller Spring.

2.5. Tape Travelling Check

Load the Tape Travelling Cassette (DA09027A), then set the cassette deck in Play mode and check the following:

- (1) After more than 2 seconds, the fluctuation of the tape travelling on the Record/Playback Head is small.
- (2) Tape is in contact with the head sufficiently.
- (3) Tape waving is small on the heads and pressure roller.

2.6. Eject Damper Adjustment

Refer to Fig. 2.4. Load a cassette tape, and with opening the Cassette Case by pressing the Eject button and closing it by hand, adjust the speed of damper movement by the Adjustment Screw.

CCW: Damper moves fast.

CW: Damper moves slowly.

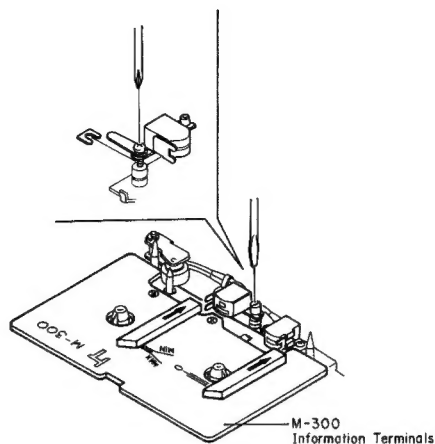


Fig. 2.1

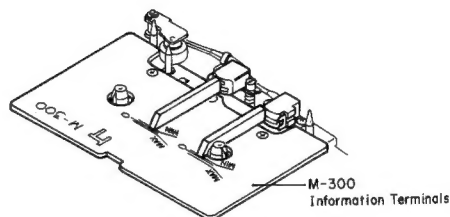


Fig. 2.2

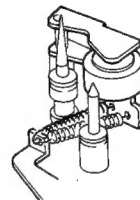


Fig. 2.3

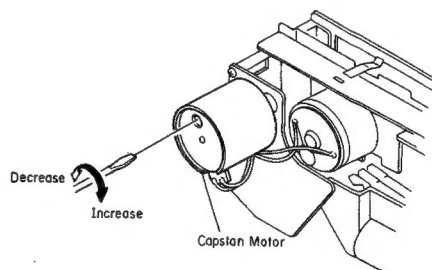


Fig. 2.4

2.7. Reel Motor Speed Adjustment in Play Mode

- (1) Connect a DC Voltmeter across the Reel Motor terminals.
- (2) Load a C-60 cassette tape, then set the cassette deck in Play mode.
- (3) Adjust VR601 on the Main P.C.B. Ass'y to obtain approx. 3 V on the DC Voltmeter at the beginning of the tape.
- (4) Load a Torque Meter TW-2111 (Made by Sony) and check that the torque is 50 ± 10 g-cm.

2.8. Tape Speed Adjustment

Refer to Fig. 2.5.

- (1) Connect a frequency counter to the Output Jacks.
- (2) Load a 3 kHz Speed and Wow/Flutter Tape (DA09006B) and Play it back.
- (3) Adjust the Tape Speed Adjustment Volume incorporated in the Capstan Motor to obtain 3,000 Hz on the frequency counter.

CCW: Motor drives slowly.

CW: Motor drives fast.

2.9. Lubrication

The tape transport is of a lubrication-free type mechanism. When the following parts are replaced, apply the specified lubricant.

- (1) Molykote® Grease (X5-6020)
Cam Motor Pulley
Thrust portion on the Capstan Shaft
- (2) FLOIL GB-TS-1
Washer between Reel Hub Ass'y and Back Tension Spring
- (3) Diamond Oil (EP56)
Reel Hub Shaft
- (4) Anderol 456
Capstan Shaft

Note: We suggest that you use the above specified lubricant or equivalent type.

The company dealing in the above lubricant is as follows:

- (a) Molykote® Grease (X5-6020)
Dowcorning Co., Ltd., 1-15-1 Nishishinbashi, Minato-ku, Tokyo, Japan
- (b) FLOIL GB-TS-1
Kanto Chemicals Co., Ltd., 2-7 Kanda Sakuma-cho, Chiyoda-ku, Tokyo, Japan
- (c) Diamond Oil (EP-56)
Mitsubishi Oil Co., Ltd., 1-2-4 Toranomom, Minato-ku, Tokyo, Japan
- (d) Anderol 456
Toyo Kokusai Oil Co., Ltd., 3-3-5 Hatchobori, Chuo-ku, Tokyo, Japan

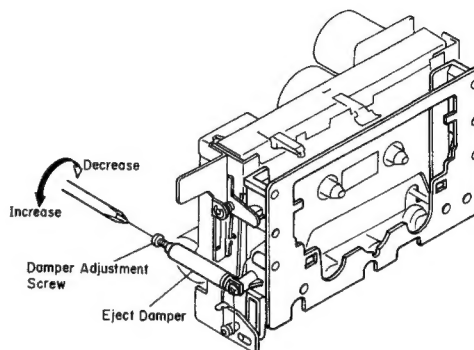


Fig. 2.5

3. PARTS LOCATION FOR ELECTRICAL ADJUSTMENT

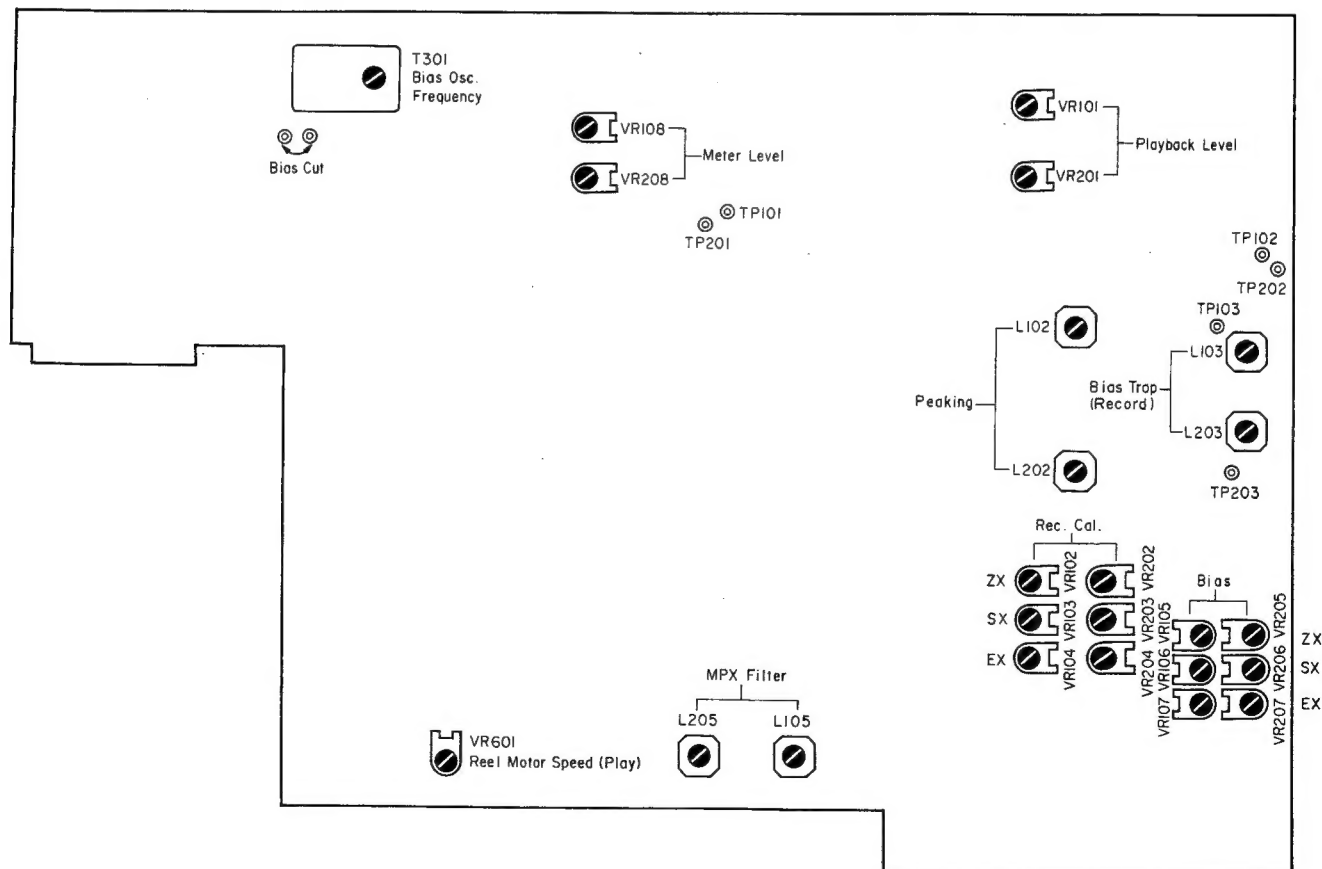


Fig. 3

4. ELECTRICAL ADJUSTMENTS AND MEASUREMENTS

Note: Electrical adjustment should be performed after mechanical adjustment is completed.

4.1. Adjustment and Measurement Instructions

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
1	Tape Speed Adjustment	3 kHz Speed and Wow/Flutter Tape (DA09006B)	Frequency Counter to Output Jacks	Playback Eq. SW — 70 μ s	Tape Speed Adjustment Volume	Adjust the volume incorporated in the capstan motor to obtain 3 kHz \pm 0.5% on the frequency counter.
2	Meter Level Calibration	400 Hz to Input Jacks	VTVM to TP101, TP201 on Main P.C.B.	Record, Pause	Main P.C.B. VR108, VR208	<ol style="list-style-type: none"> 1. Feed in 400 Hz, then adjust the Input Level control to obtain 350 mV -0.9 dB on the VTVM. 2. Adjust VR108 (VR208) so that the 0 dB segment of the level meter starts illuminating. 3. Adjust the Input Level control to obtain 350 mV on the VTVM, then decrease the generator output level by 20 dB. 4. Check to insure that the segment for -20 dB illuminates.
3	MPX Filter Adjustment	19 kHz \pm 100 Hz to Input Jacks	VTVM to Output Jacks	Record, Pause MPX SW — OFF/ON	Main P.C.B. L105, L205	<ol style="list-style-type: none"> 1. Adjust the Input Level control to obtain 0 dB (500 mV) on the VTVM. 2. Set the MPX Filter switch to ON, then adjust L105 (L205) to obtain minimum reading on the VTVM (minimum reading will be less than -30 dB).
4	Record/Playback Head Azimuth Alignment	15 kHz Azimuth Tape (DA09004A)	VTVM to Output Jacks	Playback Eq. SW — 70 μ s Dolby NR SW — OFF MPX SW — OFF	Record/Playback Head Azimuth Alignment Screw	Adjust the Record/Playback Head Azimuth Alignment Screw to obtain maximum readings of both channels on the VTVM.
5	Playback Level Calibration	400 Hz Level Tape (DA09005A)	VTVM to TP101, TP201 on Main P.C.B.	Same as above	Main P.C.B. VR101, VR201	Adjust VR101 (VR201) to obtain 350 mV on the VTVM.
6	Playback Frequency Response Adjustment	400 Hz Level Tape (DA09005A) 10 kHz PB Frequency Response Tape (DA09003A) 15 kHz PB Frequency Response Tape (DA09002A) 20 kHz PB Frequency Response Tape (DA09001A)	VTVM to Output Jacks	Playback Eq. SW — 70 μ s Dolby NR SW — OFF MPX SW — OFF		<ol style="list-style-type: none"> 1. Load a 400 Hz level tape and play it back. 2. Load 10 kHz, 15 kHz and 20 kHz PB frequency response tapes and adjust the record/playback head azimuth to obtain maximum levels on the VTVM with each tape. 3. Read the maximum levels with each tape and check to insure that the levels against the 400 Hz level tape are within the following ranges. 10 kHz (-20 dB) -2 dB to $+2$ dB 15 kHz (-20 dB) -2 dB to $+3$ dB 20 kHz (-20 dB) -2 dB to $+4$ dB Check to insure that the difference in level between 10 kHz (-20 dB) and 20 kHz (-20 dB) is less than 2 dB. Note: If the playback level of 20 kHz PB frequency response tape is insufficient, add C107 (C207) 150 pF in parallel with C108 (C208) 1200 pF in the playback eq. amp. circuit of the Main P.C.B. Ass'y. 4. Conduct step 4 "Record/Playback Head Azimuth Alignment".
7	Bias Oscillation Frequency and Erase Current Adjustment		Frequency Counter to TP102 on Main P.C.B. and VTVM across the additional 0.1 Ω resistor	Record, Pause Tape SW — ZX Eq. SW — 70 μ s Dolby NR SW — OFF MPX SW — OFF	Main P.C.B. T301 R318, R350	<ol style="list-style-type: none"> 1. Adjust T301 to obtain 105 kHz on the frequency counter. 2. Connect an additional 0.1 Ω resistor in series to the Erase Head, then connect a VTVM across it. 3. Check the erase current by the VTVM. Erase current will be in a range of 145 mA to 185 mA (typically approx. 165 mA). If erase current is not sufficient, increase it by shorting R318 or R350. 4. After completion of the erase current adjustment, re-check the bias oscillation frequency. 5. Remove the additional 0.1 Ω resistor.
8	Record Amplifier Equalizer Adjustment	21 kHz (-20 dB) to Input Jacks	VTVM to TP102, TP202 on Main P.C.B.	Same as above	Main P.C.B. L102, L202	<ol style="list-style-type: none"> 1. Short both Bias Stop test pins with a clip to stop the bias oscillation. 2. Adjust L102 (L202) to obtain peak reading at 21 kHz on the VTVM. 3. Remove the clip from the test pins.
9	Bias Trap Adjustment (Record Amp.)	Remove input signals	VTVM to TP103, TP203 on Main P.C.B.	Same as above	Main P.C.B. L103, L203	Adjust L103 (L203) to obtain maximum reading on the VTVM.

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
10	Record Level Calibration and Recording Bias Current Adjustment	400 Hz (0 dB), 400 Hz (-20 dB), 10 kHz (-20 dB) and 17 kHz (-20 dB) to Input Jacks	VTVM to TP101, TP201 and TP102, TP202 on Main P.C.B. and VTVM and Distortion Meter to Output Jacks	Record and Playback Tape SW — ZX/SX/EX Eq. SW — 70 μ s (ZX/SX) 120 μ s (EX) Dolby NR SW — C-Type/B-Type/OFF MPX SW — OFF	Main P.C.B. (Level) ZX: VR102, VR202 SX: VR103, VR203 EX: VR104, VR204 (Bias) ZX: VR105, VR205 SX: VR106, VR206 EX: VR107, VR207	Adjustment should be made in the order of ZX, SX and EX. 1. Set the Dolby NR switch to C-Type. 2. Connect a VTVM to TP101 (TP201) on the Main P.C.B. Ass'y. 3. Set the BX-2 in Record/Pause mode. 4. Feed in 400 Hz, then adjust the Input Level control to obtain 350 mV (0 dB) on the VTVM. 5. Load a reference ZX tape (DA09037A), reference SX tape (DA09025A) and reference EXII tape (DA09066A). 6. Adjust Record Cal. VR102 (VR202) for ZX, VR103 (VR203) for SX and VR104 (VR204) for EXII to center positions. 7. Connect the VTVM to TP102 (TP202) on the Main P.C.B. Ass'y. Adjust Bias VR105 (VR205) for ZX, VR106 (VR206) for SX and VR107 (VR207) for EXII to obtain the following bias current in Record/Pause mode (the VTVM is connected across a 10-ohm resistor). ZX: approx. 1 mA SX: approx. 0.5 mA EXII: approx. 0.3 mA 8. Connect the VTVM to the Output Jacks. 9. Feed in 400 Hz (-20 dB) and 17 kHz (-20 dB), then record, rewind and play them back. Adjust Bias VR105 (VR205) for ZX, VR106 (VR206) for SX and VR107 (VR207) for EXII to obtain the same playback levels at 400 Hz (-20 dB) and 17 kHz (-20 dB) on the VTVM. 10. Feed in 400 Hz (0 dB), then record, rewind and play it back. Adjust Record Cal. VR102 (VR202) for ZX, VR103 (VR203) for SX and VR104 (VR204) for EXII to obtain 0 dB on the VTVM. 11. Repeat above 9 and 10 two or three times to obtain optimum performance. 12. Set the Dolby NR switch to OFF. 13. Feed in 400 Hz (-20 dB), 10 kHz (-20 dB) and 17 kHz (-20 dB), then record, rewind and play them back. Check to insure that the playback levels are within -20 dB \pm 3 dB against the levels in Dolby NR C-Type. 14. Set the Dolby NR switch to B-Type. 15. Feed in 10 kHz (-20 dB) and 17 kHz (-20 dB), then record, rewind and play them back. Check to insure that the levels are within -20 dB \pm 2 dB against the levels in Dolby NR OFF. 16. Check to insure whether the total harmonic distortion is less than 1.0% for ZX and EXII tapes and 1.2% for SX tape. 17. If above is not sufficient, repeat 9 to 16 till satisfactory results are obtained.
11	Overall Frequency Response Adjustment	400 Hz (0 dB) and 20 Hz to 17 kHz (-20 dB) to Input Jacks	VTVM to Output Jacks	Record and Playback Tape SW — ZX/SX/EX Eq. SW — 70 μ s (ZX/SX) 120 μ s (EX) Dolby NR SW — OFF MPX SW — OFF	Main P.C.B. L102, L202	1. Set the BX-2 in Record/Pause mode. 2. Feed in 400 Hz, then set the Input Level control to obtain 0 dB (500 mV) on the VTVM. 3. Decrease the generator output control by 20 dB. 4. Feed in 20 Hz to 17 kHz (-20 dB) and record, rewind and play them back, then check to insure whether the output levels are within -20 dB \pm 4 dB. 5. If above is not sufficient, adjust L102 (L202) to obtain approx. -20 dB on the VTVM, then conduct step 10 "Record Level Calibration and Recording Bias Current Adjustment". 6. If above is not sufficient, precise re-adjustment of step 6 "Playback Frequency Response", replacement of Record/Playback Head or check on item 2.6 "Tape Travelling Check" will be required.
12	Crosstalk Measurement	1 kHz to Input Jacks	1 kHz Band Pass Filter and VTVM to Output Jacks	Record and Playback Tape SW — ZX Eq. SW — 70 μ s Dolby NR SW — OFF MPX SW — OFF		1. Erase the tape with bulk eraser. 2. Adjust the Input Level control to obtain 0 dB on the VTVM, and record the signals on the reference ZX tape (DA09037A). 3. Turn the cassette tape the other way round and play it back. 4. Measure the difference between 2 and 3.

STEP	ITEM	SIGNAL SOURCE	OUTPUT CONNECTION	MODE	ADJUSTMENT	REMARKS
13	Channel Separation Measurement	1 kHz to Input Jacks	1 kHz Band Pass Filter and VTVM to Output Jacks	Record and Playback Tape SW — ZX Eq. SW — 70 μ s Dolby NR SW — OFF MPX SW — OFF		1. Erase the tape with bulk eraser. 2. Adjust the Input Level control to obtain 0 dB on the VTVM, and set the Balance control to the extreme left (right). 3. Record, rewind and play it back, then measure the R ch (L ch) level.
14	Erasure Measurement	100 Hz to Input Jacks	100 Hz Band Pass Filter and VTVM to Output Jacks	Same as above		1. Erase the tape with bulk eraser. 2. Adjust the Input Level control to obtain 0 dB on the VTVM, and record the signals on the reference ZX tape (DA09037A). 3. Rewind the tape, set the Input Level control to minimum, and then record again. 4. Rewind the tape, play it back, and then measure the difference between 2 and 3.
15	Signal to Noise Ratio Measurement	400 Hz to Input Jacks	IHF-A Curve, Filter, VTVM and Distortion Meter to Output Jacks	Record and Playback Tape SW — ZX Eq. SW — 70 μ s Dolby NR SW — B-Type/C-Type MPX SW — OFF		1. Set the Dolby NR switch to B-Type/C-Type. 2. Feed in 400 Hz, then record, rewind and play it back. 3. Adjust the Input Level control to obtain 3% total harmonic distortion in Playback mode. 4. Set the Input Level control to minimum then record again. 5. After rewind, play back and check the output level difference between 3 and 4. Note: The filter of IHF-A curve shall be used in the measurements.
16	Total Harmonic Distortion Measurement	400 Hz to Input Jacks	VTVM and Distortion Meter to Output Jacks	Record and Playback Tape SW — ZX/SX/EX Eq. SW — 70 μ s (ZX/SX) 120 μ s (EX) Dolby NR SW — OFF MPX SW — OFF		1. Adjust the Input Level control to obtain 0 dB on the VTVM. 2. Record, rewind and play it back. 3. Read the distortion meter and check to insure that the distortion is as follows: EXII 1.0% or less SX 1.2% or less ZX 1.0% or less
17	Wow/Flutter Measurement	3 kHz Speed and Wow/Flutter Tape (DA09006B)	Wow/Flutter Meter to Output Jacks	Playback Eq. SW — 70 μ s		Play back and read the wow/flutter meter.

4.2. Dolby NR Circuit Check

Dolby NR circuit incorporates Dolby NR ICs which have no adjustment point.
Perform the following checks and make sure that the IC operates accurately, i.e., frequency response through IC is accurate.

4.2.1. Dolby NR B-Type Circuit Check

(1) Playback Dolby NR Circuit

Signal Source: 1.4 kHz to negative side of C134 (C234) on Main P.C.B. (Positive side is connected to IC101-9 (IC201-9)).
Output Connection: VTVM to test point TP101 (TP201) on Main P.C.B.
Mode: Stop
Dolby NR SW — ON (B-Type)/OFF

- Connect a VTVM to TP101 (TP201) on the Main P.C.B. Ass'y.
- Set the Dolby NR switch to B-Type. Feed in 1.4 kHz and adjust the generator output control to obtain 35 mV on the VTVM.
- Set the Dolby NR switch to OFF. Check to insure that the reading is +3.2 dB \pm 1.5 dB on the VTVM.

(2) Record Dolby NR Circuit

Signal Source: 1.4 kHz to Input Jacks
Output Connection: VTVM to test point TP101 (TP201) and negative side of C140 (C240) on the Main P.C.B.
Mode: Record/Pause
Dolby NR SW — ON (B-Type)/OFF

- Connect a VTVM to TP101 (TP201) on the Main P.C.B. Ass'y.
- Feed in 1.4 kHz and adjust the Input level control to obtain 35 mV/11.1 mV on the VTVM.
- Remove the VTVM from TP101 (TP201) and reconnect it to negative side of C140 (C240).
- Check to insure that the reading at C140 (C240) corresponds to the following with Dolby NR switch OFF and B-Type.

Input Level at TP101 (TP201)	Level at negative side of C140 (C240)	
	Dolby NR OFF	Dolby NR B-Type
35 mV	0 dB	+3.2 dB \pm 1.5 dB
11.1 mV	0 dB	+8.2 dB \pm 1.5 dB

4.2.2. Dolby NR C-Type Circuit Check

(1) Playback Dolby NR Circuit

Signal Source: 1.4 kHz to negative side of C134 (C234) on Main P.C.B. (Positive side is connected to IC101-9 (IC201-9)).
Output Connection: VTVM to test point TP101 (TP201) on Main P.C.B.
Mode: Stop
Dolby NR SW — ON (C-Type)/OFF

- Connect a VTVM to TP101 (TP201) on the Main P.C.B. Ass'y.
- Set the Dolby NR switch to C-Type. Feed in 1.4 kHz and adjust the generator output control to obtain 35 mV on the VTVM.
- Set the Dolby NR switch to OFF. Check to insure that the reading is +6.5 dB \pm 1.5 dB on the VTVM.

(2) Record Dolby NR Circuit

Signal Source: 1.4 kHz to Input Jacks
Output Connection: VTVM to test point TP101 (TP201) and negative side of C140 (C240) on the Main P.C.B.
Mode: Record/Pause
Dolby NR SW — ON (C-Type)/OFF

- Connect a VTVM to TP101 (TP201) on the Main P.C.B. Ass'y.
- Feed in 1.4 kHz and adjust the Input level control to obtain 35 mV/11.1 mV on the VTVM.
- Remove the VTVM from TP101 (TP201) and reconnect it to negative side of C140 (C240).
- Check to insure that the reading at C140 (C240) corresponds to the following with Dolby NR switch OFF and C-Type.

Input Level at TP101 (TP201)	Level at negative side of C140 (C240)	
	Dolby NR OFF	Dolby NR C-Type
35 mV	0 dB	+6.5 dB \pm 1.5 dB
11.1 mV	0 dB	+11.4 dB \pm 1.5 dB

5. MECHANISM ASS'Y AND PARTS LIST

5.1. Synthesis

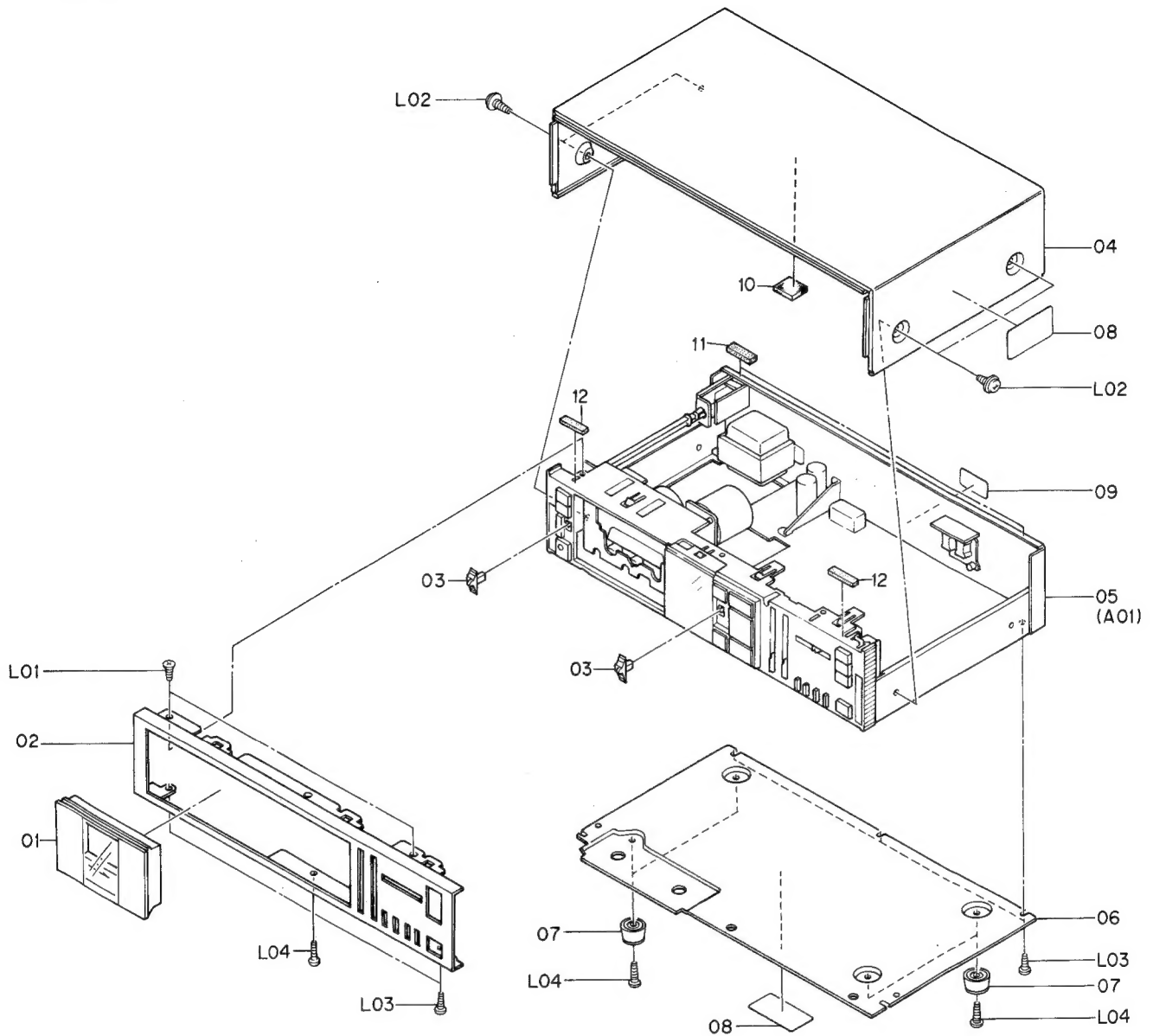


Fig. 5.1

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
	HA04342A	Synthesis (UK)	1		HA04348A	Synthesis (UK)	1
	HA04343A	Synthesis (U.S.A. & Canada)	1		HA04349A	Synthesis (U.S.A. & Canada)	1
	HA04344A	Synthesis (Japan)	1		HA04350A	Synthesis (Japan)	1
	HA04345A	Synthesis (Others)	1		HA04351A	Synthesis (Others)	1
	HA04346A	Synthesis (Australia)	1		HA04352A	Synthesis (Australia)	1
	HA04347A	Synthesis (220V Class 2) Serial No.: A31601001 - (Silver)	1		HA04353A	Synthesis (220V Class 2) Serial No.: A31701001 - (Black)	1
01	HA04362A	Cassette Case Cover Ass'y	1	01	HA04363A	Cassette Case Cover Ass'y	1
02	OH04133B	Front Panel	1	02	OH04134B	Front Panel	1
03	OH04107A	Slide Switch Knob	2	03	OH04108A	Slide Switch Knob	2
04	OH04155B	Top Cover	1	04	OH04156B	Top Cover	1
05	JA03957B	Synthesis Mechanism Ass'y (UK)	1	05	JA03963B	Synthesis Mechanism Ass'y (UK)	1
	JA03958B	Synthesis Mechanism Ass'y (U.S.A. & Canada)	1		JA03964B	Synthesis Mechanism Ass'y (U.S.A. & Canada)	1
	JA03959B	Synthesis Mechanism Ass'y (Japan)	1		JA03965B	Synthesis Mechanism Ass'y (Japan)	1
	JA03960B	Synthesis Mechanism Ass'y (Others)	1		JA03966B	Synthesis Mechanism Ass'y (Others)	1
	JA03961B	Synthesis Mechanism Ass'y (Australia)	1		JA03967B	Synthesis Mechanism Ass'y (Australia)	1
	JA03962B	Synthesis Mechanism Ass'y (220V Class 2)	1		JA03968B	Synthesis Mechanism Ass'y (220V Class 2)	1
06	OJ04605B	Bottom Cover	1	06	OJ04605B	Bottom Cover	1
07	OJ03564A	Leg T-H	4	07	OJ03564A	Leg T-H	4
08	OM04377A	Caution Label	2	08	OM04377A	Caution Label	2
09	OM03551B	Pass Label B	1	09	OM03551B	Pass Label B	1
10	OJ04630A	Rubber	1	10	OJ04630A	Rubber	1
11	OJ04629A	Top Cover Cushion B	2	11	OJ04629A	Top Cover Cushion B	2
12	OJ04628A	Top Cover Cushion A	2	12	OJ04628A	Top Cover Cushion A	2
L01	OE03054A	BT 3x8 @ Countersunk	2	L01	OE03054A	BT 3x8 @ Countersunk	2
L02	OE03033A	BT 4x8 @ Pan Washer Faced (Nickel)	4	L02	OE03032A	BT 4x8 @ Pan Washer Faced (Black Chromate)	4
L03	OE00857A	BT 3x6 @ Binding	5	L03	OE00857A	BT 3x6 @ Binding	5
L04	OE00865A	BT 3x10 @ Binding	5	L04	OE00865A	BT 3x10 @ Binding	5
—	OM03796A	Voltage Label 220V (220V Class 2)	1	—	OM03796A	Voltage Label 220V (220V Class 2)	1
—	OM03797A	Voltage Label 240V (UK & Australia)	1	—	OM03797A	Voltage Label 240V (UK & Australia)	1
—	OM03844B	Cord Label (UK)	1	—	OM03844B	Cord Label (UK)	1
—	OM04397A	Serial Number Plate	1	—	OM04397A	Serial Number Plate	1
—	OM04113A	LA Label (U.S.A. & Canada)	1	—	OM04113A	LA Label (U.S.A. & Canada)	1
—	OM04293A	Voltage Seal (Others)	1	—	OM04293A	Voltage Seal (Others)	1
—	OM04185A	FSZ Mark Label (220V Class 2)	1	—	OM04185A	FSZ Mark Label (220V Class 2)	1

5.2. Synthesis Mechanism Ass'y (A01)

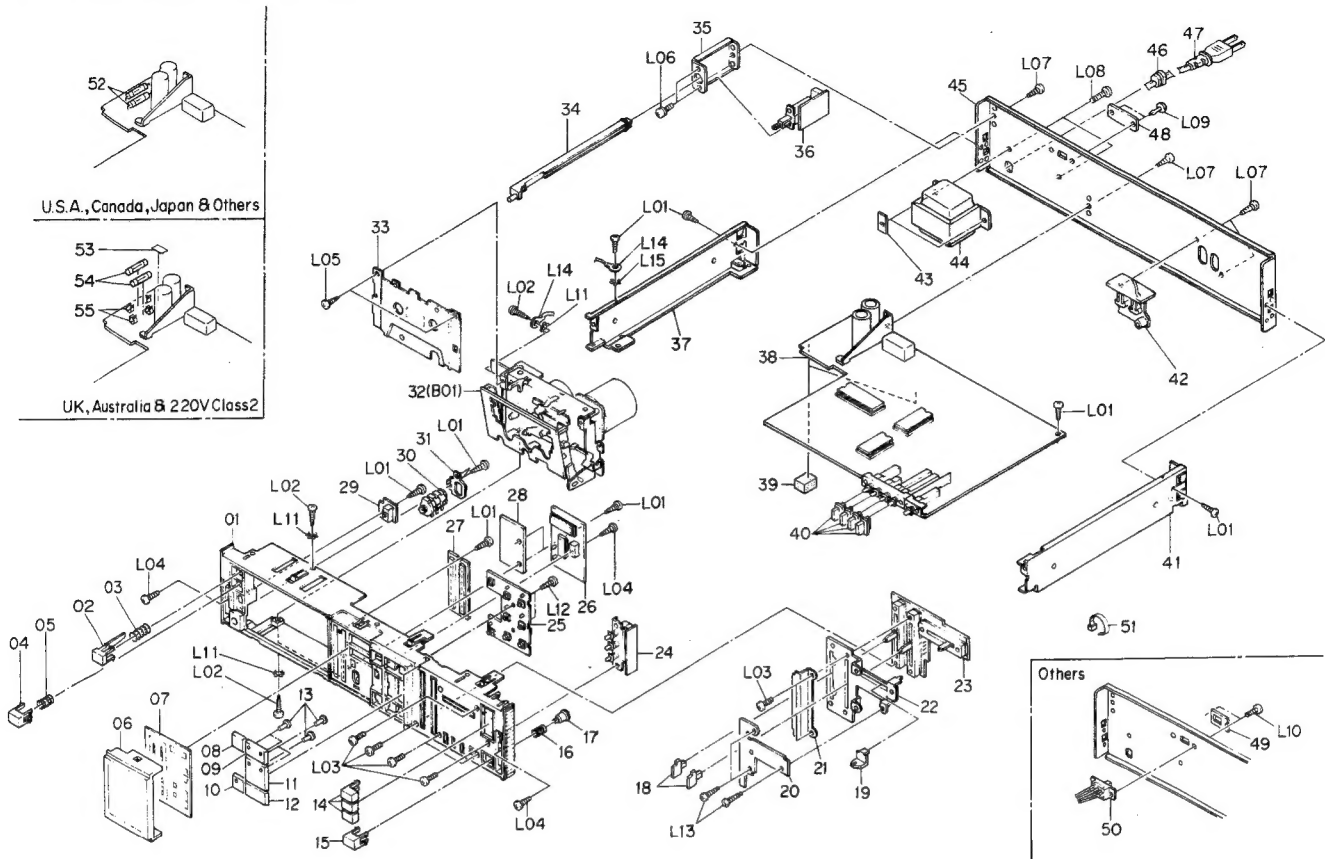


Fig. 5.2

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
A01	JA03957B	Synthesis Mechanism Ass'y (UK)	1	24	BA04804A	Dolby NR Switch P.C.B. Ass'y	1
	JA03958B	Synthesis Mechanism Ass'y (U.S.A. & Canada)	1	25	BA04802A	Control Switch P.C.B. Ass'y	1
	JA03959B	Synthesis Mechanism Ass'y (Japan)	1	26	BA04905A	Counter P.C.B. Ass'y (2nd Version)	1
	JA03960B	Synthesis Mechanism Ass'y (Others)	1		BA04800A	Counter P.C.B. Ass'y (1st Version)	1
	JA03961B	Synthesis Mechanism Ass'y (Australia)	1	27	OB06378A	Display P.C.B.	1
	JA03962B	Synthesis Mechanism Ass'y (220V Class 2) Serial No.: A31601001 - (Silver)	1	28	BA04801A	Indicator P.C.B. Ass'y	1
01	OH04137A	Front Chassis	1	29	BA04803A	Timer Switch P.C.B. Ass'y	1
02	OH04129A	Eject Button	1	30	OH08511A	Headphone Jack	1
03	OJ04607A	Eject Spring	1	31	OJ04611A	Headphone Plate	1
04	OH04125A	Power Switch Button	1	32	CA08399A	Mechanism Ass'y	1
05	OJ04608A	Power Switch Spring	1	33	HA04390A	Cover Plate Ass'y	1
06	OH04112A	Meter Cover	1	34	OJ04604B	Power Switch Joint	1
07	OH04110B	Meter Scale	1	35	OJ04076A	Power Switch Holder	1
08	OH04139B	Reset Button	1	36	BA04823A	Power Switch P.C.B. Ass'y (U.S.A. & Canada)	1
09	OH04143A	Control Button A	1		BA04824A	Power Switch P.C.B. Ass'y (UK, Australia, Others & 220V Class 2)	1
10	OH04141B	Record Mute Button	1		BA04825A	Power Switch P.C.B. Ass'y (Japan)	1
11	OH04116A	Control Button B	1	37	OJ04603D	Side Chassis L	1
12	OH04118A	Control Button C	1	38	BA04906A	Main P.C.B. Ass'y (2nd Version)	1
13	OH04120A	Lens	5		BA04861A	Main P.C.B. Ass'y (1st Version)	1
14	OH04123B	Dolby NR Switch Button	3	39	OJ04581A	Main P.C.B. Cushion	2
15	OH04121C	Eq. Button	1	40	OH04102A	Function Switch Knob	4
16	OJ04610A	Eq. Switch Spring	1	41	OJ04602D	Side Chassis R	1
17	OJ04606A	Button Joint	1	42	BA04806A	Pin Jack P.C.B. Ass'y	1
18	OH04105A	Master Volume Knob	2	43	OC01162B	Bolt Receptacle Plate	2
19	OH04103B	Balance Volume Knob	1	44	OB06699A	Power Transformer (UK, Australia & 220V Class 2)	1
20	OH04113A	Volume Plate	1		OB06698A	Power Transformer (U.S.A. & Canada)	1
21	OH04157A	Volume Cover	1		OB06697B	Power Transformer (Japan)	1
22	OH04618A	Volume Shield Plate	1		OB06700B	Power Transformer (Others)	1
23	BA04805A	Volume P.C.B. Ass'y	1	45	OH04152B	Rear Panel	1

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
46	OB08351A	Cord Bushing 4K-4 (UK)	1	A01	JA03963B	Synthesis Mechanism Ass'y (UK)	1
	OB08037U	Cord Bushing (U.S.A., Canada, Japan, Others, Australia & 220V Class 2)	1		JA03964B	Synthesis Mechanism Ass'y (U.S.A. & Canada)	1
47	OB08348A	Power Cord (UK)	1		JA03965B	Synthesis Mechanism Ass'y (Japan)	1
	OB08533A	Power Cord (U.S.A., Canada & Others)	1		JA03966B	Synthesis Mechanism Ass'y (Others)	1
	OB08219B	Power Cord (Japan)	1		JA03967B	Synthesis Mechanism Ass'y (Australia)	1
	OB05241A	Power Cord (Australia)	1		JA03968B	Synthesis Mechanism Ass'y (220V Class 2)	1
48	OB08093U	Power Cord (220V Class 2)	1			Serial No.: A31701001 - (Black)	
	OJ04622B	Switch Cover (UK, U.S.A., Canada, Japan, Australia & 220V Class 2)	1				
49	OM04407A	Voltage Selector Lock Plate (Others)	1	01	OH04138A	Front Chassis	1
50	OB07092U	Voltage Selector (Others)	1	02	OH04130A	Eject Button	1
51	OB08515A	Insu-Lock	10	03	OJ04607A	Eject Spring	1
52	OB08525A	Fuse 2A 250V (U.S.A., Canada & Others)	2	04	OH04126A	Power Switch Button	1
	OB08854A	Fuse 2A 250V (Japan)	2	05	OJ04608A	Power Switch Spring	1
53	OM04131B	Fuse Label 1A 250V (UK, Australia & 220V Class 2)	1	06	OH04112A	Meter Cover	1
54	OB08347U	Fuse 1A 250V (UK, Australia & 220V Class 2)	2	07	OH04110B	Meter Scale	1
55	OB08349A	Fuse Clip (UK, Australia & 220V Class 2)	4	08	OH04140B	Reset Button	1
—	OF01071A	Free-up Belt (UK, Australia & 220V Class 2)	1	09	OH04144A	Control Button A	1
—	OM03954A	Fuse Caution Label (U.S.A. & Canada)	1	10	OH04142B	Record Mute Button	1
L01	OE00857A	BT 3x6 @ Binding	10	11	OH04117A	Control Button B	1
L02	OE00954A	BT 2.6x8 @ Binding	4	12	OH04119A	Control Button C	1
L03	OE00509A	M3x6 @ Pan	8	13	OH04120A	Lens	5
L04	OE00868A	BT 3x8 @ Binding	3	14	OH04124B	Dolby NR Switch Button	3
L05	OE00824A	BT 2.6x6 @ Pan	2	15	OH04122C	Eq. Button	1
L06	OE00612A	M3x6 @ Pan (2A)	2	16	OJ04610A	Eq. Switch Spring	1
L07	OE03028A	BT 3x8 @ Binding (Nickel)	4	17	OJ04606A	Button Joint	1
L08	OE03034A	M4x8 @ Binding (Nickel)	2	18	OH04106A	Master Volume Knob	2
L09	OE08583A	Plastic Rivet	2	19	OH04104B	Balance Volume Knob	1
*L10	OE03031A	M3x8 @ Binding (Nickel)	2	20	OH04114A	Volume Plate	1
L11	OE00233A	Washer 3mm Toothed Lock	4	21	OH04158A	Volume Cover	1
L12	OE00862A	BT 3x6 @ Pan	2	22	OH04618A	Volume Shield Plate	1
L13	OE00714A	M2.6x6 @ Binding	2	23	BA04805A	Volume P.C.B. Ass'y	1
L14	OE00037A	Earth Lug B-5	2	24	BA04804A	Dolby NR Switch P.C.B. Ass'y	1
L15	OE00172A	Washer 3mm Toothed Lock	1	25	BA04802A	Control Switch P.C.B. Ass'y	1
—	OB02247A	PD Wire (Pin Jack — Volume)	1	26	BA04905A	Counter P.C.B. Ass'y (2nd Version)	1
—	OB02248A	PD Wire (Main — Volume)	1		BA04800A	Counter P.C.B. Ass'y (1st Version)	1
—	OB02256A	PD Wire (Main — Headphone Jack)	1	27	OB06378A	Display P.C.B.	1
—	OB02257A	PD Wire (Main — Volume)	1	28	BA04801A	Indicator P.C.B. Ass'y	1
—	OB02258A	PD Wire (Main — Volume)	1	29	BA04803A	Timer Switch P.C.B. Ass'y	1
—	OB02259A	PD Wire (Main — Pin Jack)	1	30	OH08511A	Headphone Jack	1
—	OB02292A	PD Wire (Pin Jack — Chassis)	1	31	OJ04611A	Headphone Plate	1
—	OB05275B	4P Flat Cable FC5 (Main — Timer Switch)	1	32	CA08399A	Mechanism Ass'y	1
—	OB05276B	4P Flat Cable FC3 (Main — Control Switch)	1	33	HA04390A	Cover Plate Ass'y	1
—	OB05282B	3P Flat Cable FC4 (Main — Control Switch)	1	34	OJ04604B	Power Switch Joint	1
—	OB05285B	5P Flat Cable FC8 (Main — Counter)	1	35	OJ04076A	Power Switch Holder	1
—	OB05287B	5P Flat Cable FC1 (Main — Control Switch)	1	36	BA04823A	Power Switch P.C.B. Ass'y (U.S.A. & Canada)	1
—	OB05293B	2P Flat Cable FC7 (Main — Counter)	1		BA04824A	Power Switch P.C.B. Ass'y (UK, Australia, Others & 220V Class 2)	1
—	OB05294B	3P Flat Cable FC10 (Main — Dolby NR Switch)	1	37	BA04825A	Power Switch P.C.B. Ass'y (Japan)	1
—	OB05295B	3P Flat Cable FC9 (Counter — Dolby NR Switch)	1	38	OJ04603D	Side Chassis L	1
—	OB05296B	4P Flat Cable FC2.6 (Main — Control Switch, Counter)	2	39	BA04906A	Main P.C.B. Ass'y (2nd Version)	1
—	OB05297B	5P Flat Cable FC11 (Main — Meter IC)	1	40	BA04861A	Main P.C.B. Ass'y (1st Version)	1
—	OB05299B	12P Flat Cable FC12 (Main — Indicator)	1	41	OJ04581A	Main P.C.B. Cushion	2
—	OT15300A	Wire (Main — Counter) (2nd Version)	1	42	OH04102A	Function Switch Knob	4
		*: Depends on the version.		43	OJ04602D	Side Chassis R	1
				44	BA04806A	Pin Jack P.C.B. Ass'y	1
					OC01162B	Bolt Receptacle Plate	2
					OB06699A	Power Transformer (UK, Australia & 220V Class 2)	1
					OB06698A	Power Transformer (U.S.A. & Canada)	1
					OB06697B	Power Transformer (Japan)	1
					OB06700B	Power Transformer (Others)	1
				45	OH04152B	Rear Panel	1
				46	OB08351A	Cord Bushing 4K-4 (UK)	1
					OB08037U	Cord Bushing (U.S.A., Canada, Japan, Others, Australia & 220V Class 2)	1
				47	OB08348A	Power Cord (UK)	1
					OB08533A	Power Cord (U.S.A., Canada & Others)	1
					OB08219B	Power Cord (Japan)	1
					OB05241A	Power Cord (Australia)	1
				48	OB08093U	Power Cord (220V Class 2)	1
					OJ04622B	Switch Cover (UK, U.S.A., Canada, Japan, Australia & 220V Class 2)	1
				49	OM03948A	Voltage Selector Lock Plate (Others)	1
				50	OB07092U	Voltage Selector (Others)	1
				51	OB08515A	Insu-Lock	10
						(to be continued)	

Schematic Ref. No.	Part No.	Description	Q'ty	Schematic Ref. No.	Part No.	Description	Q'ty
52	OB08525A	Fuse 2A 250V (U.S.A., Canada & Others)	2	—	OB02257A	PD Wire (Main — Volume)	1
	OB08854A	Fuse 2A 250V (Japan)	2	—	OB02258A	PD Wire (Main — Volume)	1
53	OM04131B	Fuse Label 1A 250V (UK, Australia & 220V Class 2)	1	—	OB02259A	PD Wire (Main — Pin Jack)	1
54	OB08347U	Fuse 1A 250V (UK, Australia & 220V Class 2)	2	—	OB02292A	PD Wire (Pin Jack — Chassis)	1
55	OB08349A	Fuse Clip (UK, Australia & 220V Class 2)	4	—	OB05275B	4P Flat Cable FC5 (Main — Timer Switch)	1
—	OF01071A	Free-up Belt (UK, Australia & 220V Class 2)	1	—	OB05276B	4P Flat Cable FC3 (Main — Control Switch)	1
—	OM03954A	Fuse Caution Label (U.S.A. & Canada)	1	—	OB05282B	3P Flat Cable FC4 (Main — Control Switch)	1
L01	OE00857A	BT 3x6 @ Binding	10	—	OB05285B	5P Flat Cable FC8 (Main — Counter)	1
L02	OE00954A	BT 2.6x8 @ Binding	4	—	OB05287B	5P Flat Cable FC1 (Main — Control Switch)	1
L03	OE00509A	M3x6 @ Pan	8	—	OB05293B	2P Flat Cable FC7 (Main — Counter)	1
L04	OE00868A	BT 3x8 @ Binding	3	—	OB05294B	3P Flat Cable FC10 (Main — Dolby NR Switch)	1
L05	OE00824A	BT 2.6x6 @ Pan	2	—	OB05295B	3P Flat Cable FC9 (Counter — Dolby NR Switch)	1
L06	OE00612A	M3x6 @ Pan (2A)	2	—	OB05296B	4P Flat Cable FC2,6 (Main — Control Switch, Counter)	2
L07	OE00921A	BT 3x8 @ Binding (Black Chromate)	4	—	OB05297B	5P Flat Cable FC11 (Main — Meter IC)	1
L08	OE03058A	M4x8 @ Binding (Black Chromate)	2	—	OB05299B	12P Flat Cable FC12 (Main — Indicator)	1
L09	OE08583A	Plastic Rivet	2	—	OT15300A	Wire (Main — Counter) (2nd Version)	1
*L10	OE00818A	M3x8 @ Binding (Bronze)	2				
L11	OE00233A	Washer 3mm Toothed Lock	4				
L12	OE00862A	BT 3x6 @ Pan	2				
L13	OE00714A	M2.6x6 @ Binding	2				
L14	OE00037A	Earth Lug B-5	2				
L15	OE00172A	Washer 3mm Toothed Lock	1				
—	OB02247A	PD Wire (Pin Jack — Volume)	1				
—	OB02248A	PD Wire (Main — Volume)	1				
—	OB02256A	PD Wire (Main — Headphone Jack)	1				

*: Depends on the version.

5.3. Mechanism Ass'y (B01)

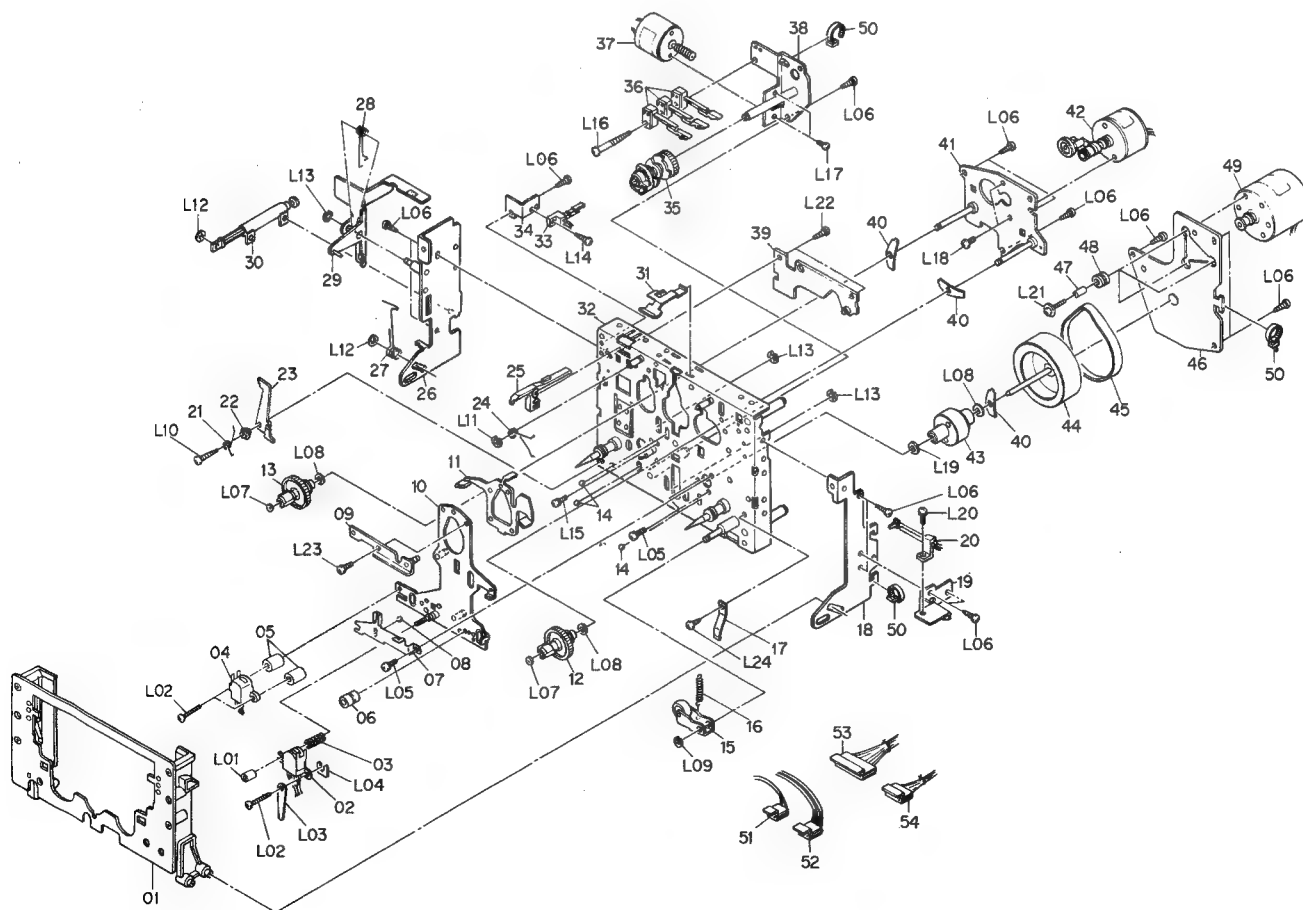


Fig. 5.3

Schematic Ref. No.	Part No.	Description	Q'ty
B01	CA08399A	Mechanism Ass'y Serial No.: A316.701001 -	1
01	CA80001A	Cassette Case Ass'y	1
02	OG01371A	Record/Playback Head RP-2G	1
03	OC80001A	Azimuth Adjust Spring	1
04	OG01365A	Erase Head E-2D	1
05	OC80044A	Erase Head Collar	2
06	OC80045A	Record/Playback Head Collar	1
07	OC80003A	Head Base Hold Plate	1
08	OC80004A	Steel Ball 30	1
09	OC80005A	Reinforce Plate	1
10	OC80006A	Head Base	1
11	CA80002A	Brake Ass'y	1
12	CA80003A	Take-up Reel Hub Ass'y	1
13	CA80004A	Supply Reel Hub Ass'y	1
14	OC80007A	Steel Ball 20	3
15	CA80005A	Pressure Roller Ass'y	1
16	OC80008A	Pressure Roller Spring	1
17	OC80009A	Cassette Case Spring	1
18	OC80010A	Cassette Case Holder R	1
19	OC80011A	Eject Sensor Holder	1
20	OC80012A	Eject Sensor	1
21	OC80013A	Lock Lever Spring	1
22	OC80014A	Lock Lever Collar	1
23	OC80015A	Lock Lever	1
24	OC80016A	Brake Spring	1
25	OC80017A	Record Protector Lever	1
26	OC80018A	Cassette Case Holder L	1
27	OC80019A	Eject Spring	1
28	OC80020A	Eject Lever Spring	1
29	OC80021A	Eject Lever	1
30	CA80006A	Pneumatic Damper Ass'y	1
31	OC80022A	Cassette Hold Spring	1
32	OC80023A	Mechanism Chassis	1
33	OC80024A	Record Protector	1
34	OC80025A	Record Protector Holder	1
35	OC80026A	Cam	1
36	OC80027A	Mode Switch	3
37	CA80007A	Control Motor Ass'y	1
38	OC80028A	Control Motor Holder	1
39	CA80011A	Shut-off P.C.B. Ass'y	1
40	OC80029A	Back Tension Spring	3
41	OC80030A	Reel Motor Holder	1
42	CA80008A	Reel Motor Ass'y	1
43	OC80031A	Capstan Flange	1
44	OC80033A	Flywheel	1
45	OC80034A	Capstan Belt	1
46	CA80009A	Flywheel Holder Ass'y	1
47	OC80035A	Sleeve	3
48	OC80036A	Floating Rubber	3
49	CA80010A	Capstan Motor Ass'y	1
50	OC80037A	Insu-Lock	3
51	OC80040A	2P-H Connector	1
52	OC80041A	4P-H Connector	1
53	OC80042A	9P-H Connector	1
54	OC80043A	5P-H Connector	1
L01	OC80046A	Azimuth Adjust Screw	1
L02	OE03038A	M2x12 @ Binding	3
L03	OE03053A	Wire Holder	1
L04	OC80048A	Shim 0.03T	(1)
	OC80038A	Shim 0.06T	(1)
	OC80039A	Shim 0.1T	(1)
L05	OE03046A	M2.6x6 @ Pan (2A)	3
L06	OE03042A	FT M2.5x5 @ Pan	14
L07	OE03049A	Washer 1.8mm FT	2
L08	OE03050A	Washer 3.1mm FT	3
L09	OE00222A	E-Ring 2mm	1
L10	OE03043A	FT M2.5x10 @ Pan	1
L11	OE00698A	E-Ring 2.5mm	1
L12	OE03052A	Stopper Ring 2.4mm	2
L13	OE00181A	E-Ring 3mm	3
L14	OE03048A	FT M2.6x6 @ Pan	1
L15	OE03036A	M2x4 @ Pan (2A)	1
L16	OE03044A	FT M2.5x20 @ Pan	1
L17	OE00691A	M2x3 @ Pan	2
L18	OE03045A	M2.6x3 @ Binding	2
L19	OE03051A	Capstan Washer	1
L20	OE03037A	M2x5 @ Pan (2A)	1
L21	OE03047A	M2.6x9 @ Pan	3
L22	OE03041A	FT M2.5x4 @ Pan	2
L23	OE03040A	FT M2.5x3.5 @ Pan	1
L24	OE03035A	M2x3.2 @ Truss	1

6. MOUNTING DIAGRAMS AND PARTS LIST

Notes: 1. Mounting diagram shows a dip side view of the printed circuit board.

2. Diode is 1SS53, 1S953, or 1S1555 unless otherwise specified.

3. Abbreviation for part name:

TR — Transistor, SiD — Silicon Diode, GD — Germanium Diode, ZD — Zener Diode

RK — Carbon Resistor, RM — Metal Film Resistor, RF — Fail Safe Type Resistor, RC — Cement Resistor,

RW — Wire Wound Resistor

CE — Electrolytic Capacitor, CM — Mylar Capacitor, CC — Ceramic Capacitor, CP — PP Capacitor,

CT — Tantalum Capacitor, C — Mica Capacitor

6.1. Power Switch P.C.B. Ass'y

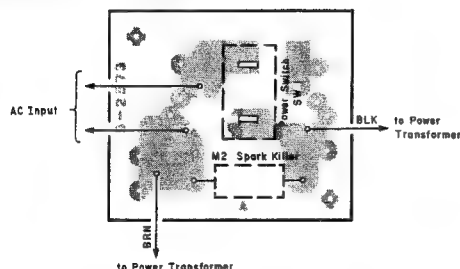


Fig. 6.1

6.2. Pin Jack P.C.B. Ass'y

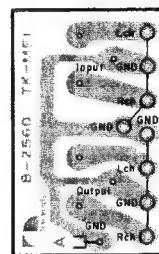
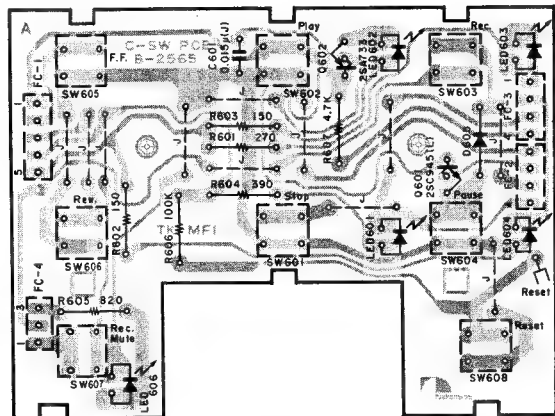


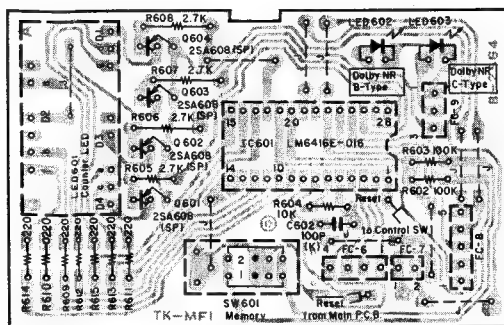
Fig. 6.2

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
SW1	BA04823A	Power Switch P.C.B. Ass'y (U.S.A., Canada & Others)	IC301 D101,201 R301 R302 R303 R304 R305-314	BA04801A	Indicator P.C.B. Ass'y	IC601 Q601,602 603,604 LED601 LED602,603 R602,603 R604 R605 R606,607 608 R609-615 C602 SW601	BA04905A	Counter P.C.B. Ass'y (2nd Version)
	BA04824A	Power Switch P.C.B. Ass'y (UK, Australia & 220V Class 2)		OB02566A OB06369A OB01909A OB01888A OB01887A OB01857A OB09797A OB05698A	Indicator P.C.B. IC TA7612AP SiD 1S1555 RK 10K 1/4W J RK 5.6K 1/4W J RK 1K 1/4W J RK 120 1/4W J RK 1.5K 1/4W J		OB02564A OB06368A OB06319A	Counter P.C.B. IC LM6416E-106 TR 2SA608 (SP)
	BA04825A	Power Switch P.C.B. Ass'y (Japan)		OB09281A	CC 150P 50V K (10)		OB06326A OB06333A	Counter LED LED RED TLR124A
	OB02573A	Power Switch P.C.B. (Japan)		BA04803A	Timer Switch P.C.B. Ass'y		OB09725A OB09701A OB09687A OB05629A	RK 100K 1/6W J RK 10K 1/6W J RK 2.7K 1/6W J RK 2.7K 1/4W J
	OB07406A	Power Switch (U.S.A., Canada & Others)		OB02569A OB07437A	Timer Switch P.C.B. Slide Switch		OB09661A	RK 220 1/6W J (7)
	OB07407A	Power Switch (U.S.A., Canada & Others)		OB02569A OB07437A	Timer Switch P.C.B. Slide Switch		OB09282A OB07437A OJ04614A	CC 100P 50V K Slide Switch Shield Plate (1)
	OB07408A	Power Switch (UK, Australia & 220V Class 2)		BA04802A	Control Switch P.C.B. Ass'y		BA04800A	Counter P.C.B. Ass'y (1st Version)
	OB08363A	Spark Killer (Japan)		OB02565A OB01872A OB06013A OB06334A	Control Switch P.C.B. TR 2SC945 (L) TR 2SA733 LED GRN TLG124A		OB02564A OB06368A OB06319A	Counter P.C.B. IC LM6416E-106 TR 2SA608 (SP)
	OB08342A	Spark Killer (U.S.A., Canada & Others)		OB06333A	LED RED TLR124A		OB06326A OB06333A	Counter LED LED RED TLR124A
	OB08955A	Spark Killer (UK, Australia & 220V Class 2)		OB01909A OB05645A OB05795A OB05691A OB01680A OB01889A OB01846A OB05557A OB07438A	SiD 1S1555 RK 270 1/4W J RK 150 1/4W J RK 390 1/4W J RK 820 1/4W J RK 100K 1/4W J RK 4.7K 1/4W J CM 0.015μ 50V J Switch		OB09743A OB09725A OB09701A OB09687A OB05629A	RK 560K 1/6W J RK 100K 1/6W J RK 10K 1/6W J RK 2.7K 1/6W J RK 2.7K 1/4W J
	OE00752A	Eyelet 2x3 (3)		Q601 Q602 LED601,602,603 LED603 D605 R601 R602,603 R604 R605 R606 R607 C601 SW601-608			OB09661A	RK 220 1/6W J (7)
	BA04806A	Pin Jack P.C.B. Ass'y		CA80011A	Shut-off P.C.B. Ass'y	C601 C602 SW601	OB05796A OB09282A OB07437A OJ04614A	CM 0.047μ 50V J CC 100P 50V K Slide Switch Shield Plate (1)
	OB02567A OB02246A	Pin Jack P.C.B. 4P Pin Jack (1)		OC80047A OB06388A OB06389A	Shut-off P.C.B. TR 2SC2812 Photo Reflector NJL5141			
VR301 VR302 VR303	BA04805A	Volume P.C.B. Ass'y	Q601 Q602 R601,603 R602	OB09840A OB09841A	RK 680 Leadless RK 18K Leadless			
	OB02568A OB07431A OB07433A OB07432A OJ04618A	Volume P.C.B. VR 100K (A) x 2 VR 100K (MN) VR 10K (A) x 2 VR Shield Plate (1)						
R301,302 R341 C321 SW301,302	BA04804A	Dolby NR Switch P.C.B. Ass'y	Q601 Q602 R601,603 R602	OB02570A	Dolby NR Switch P.C.B.			
	OB01857A	RK 1K 1/4W J		OB01682A	RK 6.8K 1/4W J			
	OB01682A	CE 10μ 16V		OB01412A	Push Switch (1)			
	OB07430A	Shield Plate (1)		OJ04616A	Shield Plate (1)			

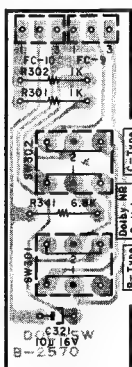
6.7. Control Switch P.C.B. Ass'y



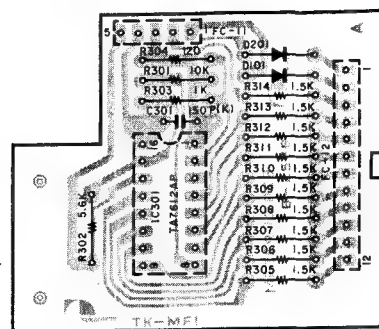
6.9. Counter P.C.B. Ass'y



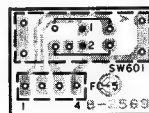
6.4. Dolby NR Switch P.C.B. Ass'y



6.5. Indicator P.C.B. Ass'y



6.6. Timer Switch P.C.B. Ass'y



6.8. Shut-off P.C.B. Ass'y

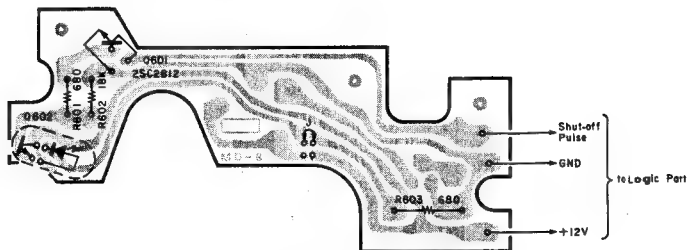


Fig. 6.8

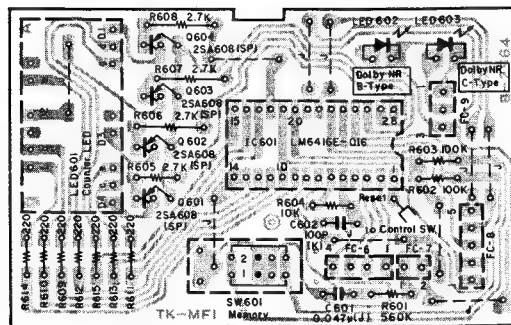


Fig. 6.9.2 1st Version

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
	BA04906A	Main P.C.B. Ass'y (2nd Version)	C307	OB01400A	CE 100μ 16V	C133,138	OB01412A	CE 10μ 16V
	— Rec. Level —		CN1	OB02242A	4P-T Post	140,154		
VR102,202	OB07418A	Semi-fixed VR 20K		— DC Supply —		233,238		
VR103,104	OB07417A	Semi-fixed VR 10K	IC401	OB06380A	IC RC7812	240,254	OB09312A	CP 0.01μ 100V G
203,204			Q401,402	OB01872A	TR 2SC945 (L)	C135,235	OB09240A	CP 0.033μ 100V G
R127,227	OB01683A	RK 15K 1/4W J	ZD401	OB06167A	ZD 6.2V RD6.2EB3	C136,236	OB05652A	CM 4700P 50V J
R128,228	OB09577A	RM 7.15K 1/4W F	D401	OB06282A	Diode Bridge DBA10	C137,237	OB09280A	CC 47P 50V J
R129,131	OB01856A	RK 8.2K 1/4W J	D402,403	OB01909A	SiD 1S1555	C139,239	OB05796A	CM 0.047μ 50V J
229,231			R401	OB09883A	RF 560 1W J	C141,241	OB05583A	CM 0.033μ 50V J
R130,132	OB01888A	RK 10K 1/4W J	R402	OB01889A	RK 100K 1/4W J	C142,148		
135,137			R403	OB05560A	RK 18K 1/4W J	242,248	OB01780A	CM 0.1μ 50V J
230,232			R404	OB01887A	RK 5.6K 1/4W J	C143,146		
235,237			R405	OB01857A	RK 1K 1/4W J	147,243		
R133,136	OB05629A	RK 2.7K 1/4W J	C401,402	OB09292A	CC 0.1μ 50V Z	246,247	OB09570A	CE 0.15μ 50V (LN)
233,236			C403	OB09799A	CE 4700μ 25V	322		
C119,121	OB05571A	CM 680P 50V J	C404	OB01401A	CE 470μ 25V	C144,244	OB05682A	CM 0.068μ 50V J
219,221			C405	OB09798A	CE 6800μ 16V	320	OB05584A	CM 0.22μ 50V J
C120,220	OB05843A	CM 0.012μ 50V J	C406	OB01392A	CE 470μ 16V	C145,245	OB09189A	CM 2700P 50V J
C122,222	OB05687A	CM 1200P 50V J	C407	OB09251A	CE 33μ 25V	C149,249	OB05687A	CM 1200P 50V J
C123,223	OB09189A	CM 2700P 50V J		OB08676A	Heat Sink (1)	C150,250	OB09257A	CE 2200μ 6.3V
	— Rec. Eq. Amp. —			OE00507A	Nut Hex. M3 (1)	C151,251	OB09191A	CP 4700P 100V G
IC303	OB06146A	IC RC4558DD		OE00612A	M3x6 ⊕ Pan (2A)	C152,252		
Q104,204	OB06299A	TR 2SC2878		OE00857A	BT 3x6 ⊕ Binding (2)	C153,253	— Line Amp. —	
L102,202	OB00068A	Trap Coil 10.5mH					OB06124B	IC RC4558D
L103,203	OB06696A	L-C Block TF10		— Bias Osc. —			OB01889A	RK 100K 1/4W J
VR105,107	OB07419A	Semi-fixed VR 50K	Q304	OB06332A	TR 2SB564 (M)	R150,151		
205,207			T301	OB06688A	Bias Osc. Unit	250,251	OB01857A	RK 1K 1/4W J
VR106,206	OB07418A	Semi-fixed VR 20K	R317	OB09263A	RK 12K 1/4W J	R152,252	OB05615A	RK 22K 1/4W J
R113,213	OB05743A	RK 27K 1/4W J	R318	OB09831A	RF 22 1W J	R162,262	OB09263A	RK 12K 1/4W J
R114,214	OB01888A	RK 10K 1/4W J	R350	OB09837A	RF 10 1W J	R163,263	OB05621A	RK 120K 1/4W J
R115,215	OB01889A	RK 100K 1/4W J	C305	OB01403A	CE 47μ 16V	R164,264	OB05626A	RK 150K 1/4W J
R116,117	OB05640A	RK 180K 1/4W J	C306	OB09838A	CP 9100P 100V J	R360,361	OB01405A	CE 1μ 50V
119,216			CN2	OB02233A	2P-T Post	C126,226	OB01836A	CE 47μ 10V
217,219				— Mute —		C128,228	OB01412A	CE 10μ 16V
R118,218	OB01857A	RK 1K 1/4W J	IC301	OB06381A	IC μPD4011BC	C129,229	OB05885A	CE 100μ 10V
R120,220	OB05675A	RK 3.9K 1/4W J	Q301	OB06332A	TR 2SB564 (M)	C327	— Headphone Amp. —	
R121,221	OB05577A	RK 330 1/4W J	Q302	OB01872A	TR 2SC945 (L)		OB06370A	IC RC4556D
R122,222	OB05575A	RK 560 1/4W J	Q303	OB06155A	TR 2SA733 (P)	IC304	OB06299A	TR 2SC2878
R123,223	OB01854A	RK 39K 1/4W J	D301,302	OB01909A	SiD 1S1555	Q108,208	OB05622A	RK 2.2K 1/4W J
R125,225	OB01682A	RK 6.8K 1/4W J	303,304			R165,265	OB01682A	RK 6.8K 1/4W J
R126,226	OB05936A	RK 10 1/4W J	R301,308	OB05509A	RK 33K 1/4W J	R166,266	OB01889A	RK 100K 1/4W J
R138,238	OB01679A	RK 100 1/4W J	311			R167,168		
R139,239	OB01887A	RK 5.6K 1/4W J	R302,312	OB05626A	RK 150K 1/4W J	267,268	OB05579A	RK 22 1/4W J
R140,240	OB05560A	RK 18K 1/4W J	322	OB01889A	RK 100K 1/4W J	R170,270	OB01857A	RK 1K 1/4W J
R192,292	OB01683A	RK 15K 1/4W J	R303,306			R171,271	OB09049A	RF 22 1/4W J
C110,210	OB01804A	CM 3900P 50V J	307,309			R342	OB09327A	CE 0.33μ 50V (LN)
C111,211	OB01405A	CE 1μ 50V	310,315			C130,230	OB01398A	CE 220μ 16V
C112,212	OB01862A	CE 22μ 16V	R304,313			C131,231	OB01400A	CE 100μ 16V
C113,213	OB01403A	CE 47μ 16V	314,321			C323		
C114,214	OB05659A	CM 5600P 50V J	R305	OB05627A	RK 330K 1/4W J	Q105,106		
C115,215	OB05652A	CM 4700P 50V J	R316	OB05776A	RK 1M 1/4W J	107,205	OB01872A	TR 2SC945 (L)
C116,216	OB01412A	CE 10μ 16V	C301,304	OB01405A	CE 1μ 50V	206,207	OB06384A	ZD 5.5V XZ055
C117,217	OB05682A	CM 0.068μ 50V J	C302,303	OB09327A	CE 0.33μ 50V (LN)	ZD101,201	OB01909A	SiD 1S1555
C118,218	OB09283A	CC 220P 50V K	RL301	OB07420A	Relay 12V	D101,102		
C150,250	OB09393A	CC 68P 50V J		— Dolby NR —		201,202		
C161,261	OB09281A	CC 150P 50V K				305		
	— PB Eq. Amp. —		IC101,201	OB06383A	IC TEA0654	VR108,208	OB07425A	Semi-fixed VR 100K
Q101,102	OB06142A	TR 2SC2240 (BL)	IC102,202	OB06382A	IC TEA0652	R141,241	OB05509A	RK 33K 1/4W J
201,202			L104,204	OB06691A	L-C Block YEL	R142,145	OB01889A	RK 100K 1/4W J
Q103,203	OB01872A	TR 2SC945 (L)	L105,205	OB06690A	L-C Block BLU	146,242		
ZD301	OB06233A	ZD 10V RD10EB3	R173,273	OB05629A	RK 2.7K 1/4W J	245,246		
L101,201	OB03919B	Inductor 36mH	R174,274	OB09826A	RK 3K 1/4W J	R143,243	OB05784A	RK 560K 1/4W J
VR101,201	OB07418A	Semi-fixed VR 20K	R175,275	OB09588A	RK 2.4K 1/4W J	R144,244	OB05626A	RK 150K 1/4W J
R101,201	OB01684A	RK 470K 1/4W J	R176,276	OB09317A	RM 3.3K 1/4W F	R147,148	OB05508A	RK 56K 1/4W J
R102,202	OB09330A	RK 100K 1/4W J (Noiseless)	R178,278	OB09491A	RM 1K 1/4W F	247,248		
			R180,280	OB05692A	RK 68K 1/4W J	R149,249	OB05615A	RK 22K 1/4W J
R103,203	OB01889A	RK 100K 1/4W J	R181,281	OB09795A	RM 5.1K 1/4W F	R320	OB09216A	RF 10 1/4W J
R104,204	OB05631A	RK 82 1/4W J	R182,282	OB09420A	RM 2.2K 1/4W F	C124,224	OB09570A	CE 0.15μ 50V (LN)
R105,205	OB05640A	RK 180K 1/4W J	R184,284	OB09356A	RM 4.7K 1/4W F	C125,225	OB09148A	CE 10μ 25V (LN)
R106,206	OB05622A	RK 2.2K 1/4W J	R185,285	OB05641A	RK 47K 1/4W J	C308	OB01400A	CE 100μ 16V
R107,207	OB05743A	RK 27K 1/4W J	R186,286	OB09517A	RK 75K 1/4W J			
R108,208	OB09830A	RM 4.87K 1/4W F	R187,190	OB05627A	RK 330K 1/4W J	IC601	OB06367A	IC TMP4315BP-1811
R109,209	OB09829A	RM 3.32K 1/4W F	R188,189			IC602	OB06214A	IC μPD4071C
R110,210	OB01680A	RK 820 1/4W J	R188,289			Q601,618	OB06066A	TR 2SD471 (L,M)
R111,211	OB01888A	RK 10K 1/4W J	R191,291			Q602,603	OB06371A	TR 2SD1286
R112,212	OB09263A	RK 12K 1/4W J	R340			Q604,605	OB01872A	TR 2SC945 (L)
R319	OB01857A	RK 1K 1/4W J	C132,134			619,623		
C102,202	OB09137A	CE 22μ 25V (LN)	232,234			624,625		
C103,203	OB09283A	CC 220P 50V K		OB09796A	RM 12K 1/4W F	Q606,607	OB06372A	TR 2SA953
C104,204	OB01836A	CE 47μ 10V		OB01889A	RK 100K 1/4W J	612,613		
C105,205	OB01863A	CE 3.3μ 50V		OB09223A	CE 1μ 50V (LN)			
C106,206	OB05832A	CM 0.018μ 50V J						
C107,207	OB09281A	CC 150P 50V K						
C108,208	OB05687A	CM 1200P 50V J						

Schematic Ref. No.	Part No.	Description
Q608,609	OB06322A	TR 2SC2002
614,615		
620,621		
Q610,611	OB06013A	TR 2SA733
616,617		
622		
ZD601	OB06385A	ZD 5.6V XZ056
D601-618	OB01909A	SID 1S1555 (17)
L601	OB06689A	L-C Block BLK
VR601	OB07421A	Semi-fixed VR 300
R601	OB09803A	R Network 47Kx5
R602	OB09824A	R Network 100Kx3
R603,612	OB01846A	RK 4.7K 1/4W J
614,649		
R604,605	OB01888A	RK 10K 1/4W J
606,629		
R607,608	OB05625A	RK 220K 1/4W J
R609,643	OB05629A	RK 2.7K 1/4W J
R610,611	OB05509A	RK 33K 1/4W J
648		
R613	OB01683A	RK 15K 1/4W J
R615	OB05577A	RK 330 1/4W J
R616,617	OB01857A	RK 1K 1/4W J
618,619		
631		
R620,621	OB01684A	RK 470K 1/4W J
624,625		
R622,623	OB01933A	RK 220 1/4W J
R626,627	OB01679A	RK 100 1/4W J
R628	OB09304A	RK 3.3 1/4W J
R630	OB05698A	RK 1.5K 1/4W J
R632	OB09831A	RF 22 1W J
R633	OB05560A	RK 18K 1/4W J
R635	OB05743A	RK 27K 1/4W J
R636	OB09882A	RK 620 1/4W J
R637	OB01887A	RK 5.6K 1/4W J
R638	OB05645A	RK 270 1/4W J
R639	OB09832A	RF 27 1W J
R640	OB05575A	RK 560 1/4W J
R641	OB09217A	RF 5.6 1/4W J
R642,644	OB01889A	RK 100K 1/4W J
R645	OB05627A	RK 330K 1/4W J
R646	OB05641A	RK 47K 1/4W J
R647	OB05508A	RK 56K 1/4W J
R650	OB01856A	RK 8.2K 1/4W J
R651	OB06706A	RW 3.5
C601	OB01398A	CE 220μ 16V
C602	OB09817A	CE 33μ 10V (LN)
C603,605	OB01405A	CE 1μ 50V
C604	OB09222A	CE 0.47μ 50V (LN)
C607	OB01802A	CM 2200P 50V J
CN3	OB02243A	5P-T Post
CN4	OB02245A	9P-T Post
— Miscellaneous —		
	OB02563B	Main P.C.B.
	OB02249A	PD Wire (1)
	OB02250A	PD Wire (1)
	OB02251A	PD Wire (1)
	OB02255A	PD Wire (1)
	OB02260A	PD Wire (1)
	OB02261A	PD Wire (1)
	OB02262A	PD Wire (1)
	OB02264A	PD Wire (1)
	OB02265A	PD Wire (1)
	OB02266A	PD Wire (1)
	OB02267A	PD Wire (1)
	OB02269A	PD Wire (1)
	OJ04613A	Shield Plate M (1)
	OB07434A	Push Switch (1)
	OB07436A	Push Switch (1)
	OE00509A	M3x6 @ Pan (3)

6.10. Main P.C.B. Assy

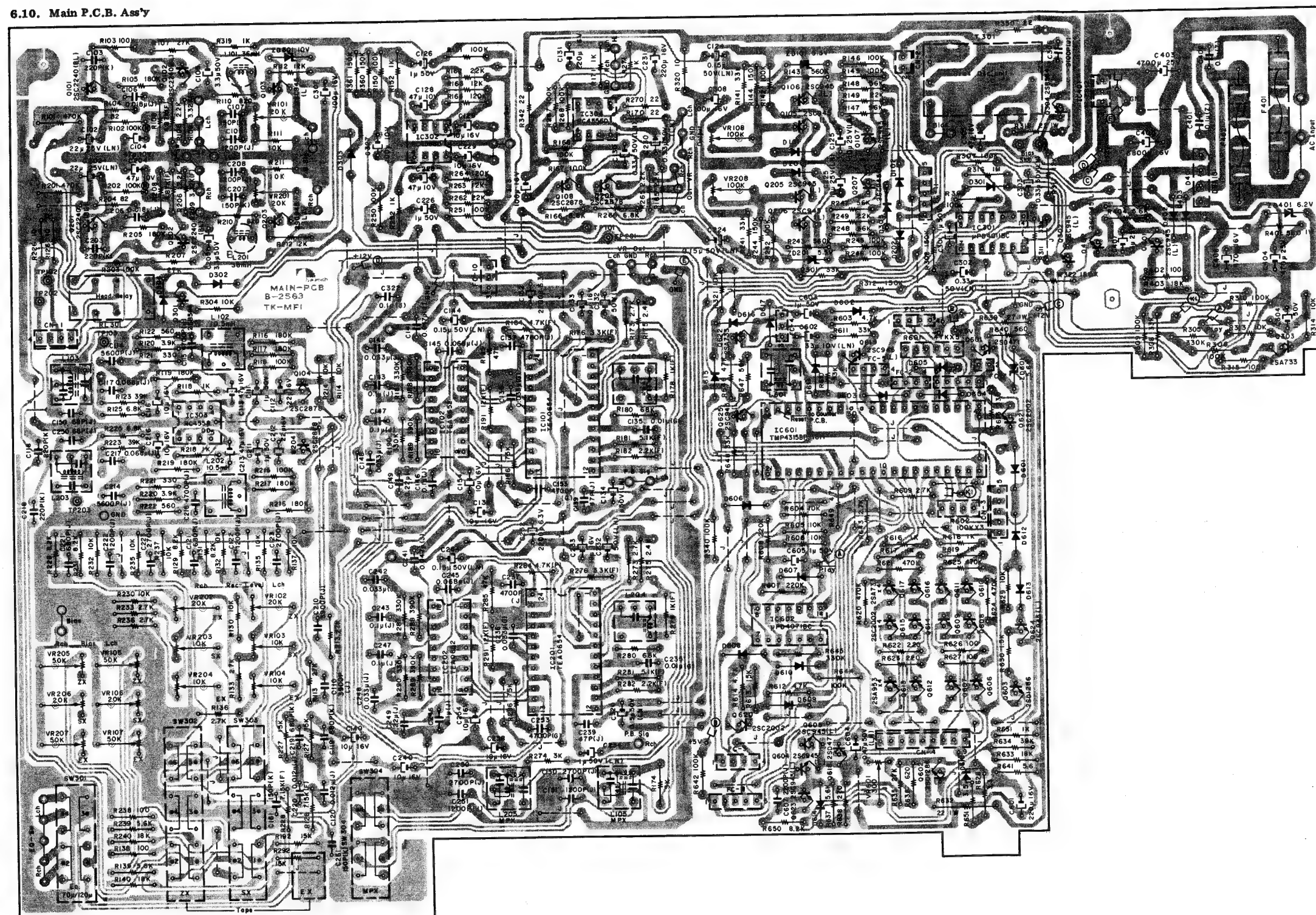


Fig. 6.10.1 2nd Version

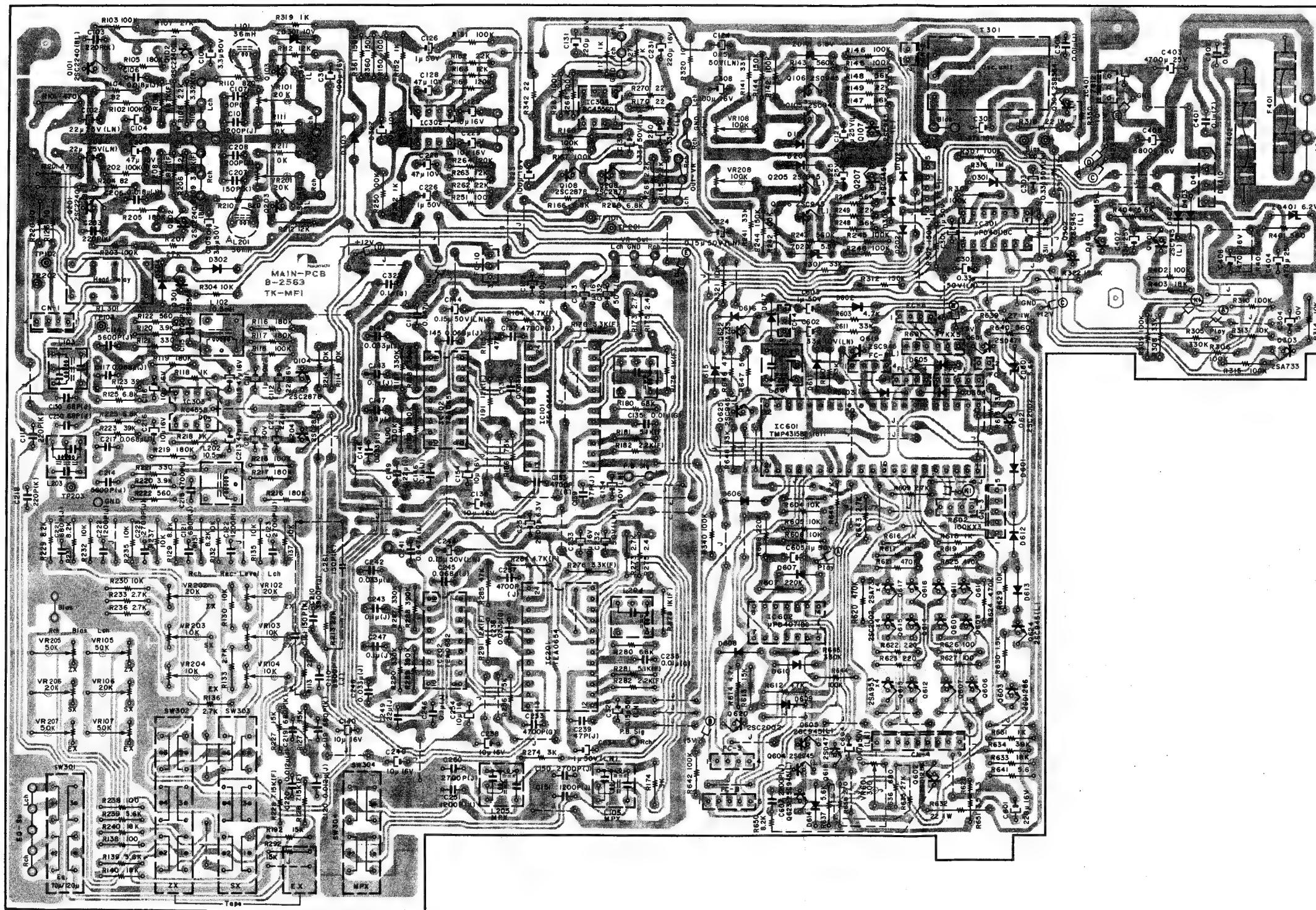


Fig. 6.10.2 1st Version

Schematic Ref. No.	Part No.	Description
	BA04861A	Main P.C.B. Ass'y (1st Version)
— Rec. Level —		
VR102,202	OB07418A	Semi-fixed VR 20K
VR103,104	OB07417A	Semi-fixed VR 10K
203,204		
R127,227	OB01683A	RK 15K 1/4W J
R128,228	OB09577A	RM 7.15K 1/4W F
R129,131	OB01856A	RK 8.2K 1/4W J
229,231		
R130,132	OB01888A	RK 10K 1/4W J
135,137		
230,232		
235,237		
R133,136	OB05629A	RK 2.7K 1/4W J
233,236		
C119,121	OB05571A	CM 680P 50V J
219,221		
C120,220	OB05843A	CM 0.012μ 50V J
C122,222	OB05687A	CM 1200P 50V J
C123,223	OB09189A	CM 2700P 50V J
— Rec. Eq. Amp. —		
IC303	OB06146A	IC RC4558DD
Q104,204	OB06299A	TR 2SC2878
L102,202	OB00068A	Trap Coil 10.5mH
L103,203	OB06696A	L-C Block TF10
VR105,107	OB07419A	Semi-fixed VR 50K
205,207		
VR106,206	OB07418A	Semi-fixed VR 20K
R113,213	OB05743A	RK 27K 1/4W J
R114,214	OB01888A	RK 10K 1/4W J
R115,215	OB01889A	RK 100K 1/4W J
R116,117	OB05640A	RK 180K 1/4W J
119,216		
217,219		
R118,218	OB01857A	RK 1K 1/4W J
R120,220	OB05675A	RK 3.9K 1/4W J
R121,221	OB05577A	RK 330 1/4W J
R122,222	OB05575A	RK 560 1/4W J
R123,223	OB01854A	RK 39K 1/4W J
R125,225	OB01682A	RK 6.8K 1/4W J
R126,226	OB05936A	RK 10 1/4W J
R138,238	OB01679A	RK 100 1/4W J
R139,239	OB01887A	RK 5.6K 1/4W J
R140,240	OB05560A	RK 18K 1/4W J
R192,292	OB01683A	RK 15K 1/4W J
C110,210	OB01804A	CM 3900P 50V J
C111,211	OB01405A	CE 1μ 50V
C112,212	OB01862A	CE 22μ 16V
C113,213	OB01403A	CE 47μ 16V
C114,214	OB05659A	CM 5600P 50V J
C115,215	OB05652A	CM 4700P 50V J
C116,216	OB01412A	CE 10μ 16V
C117,217	OB05682A	CM 0.068μ 50V J
C118,218	OB09283A	CC 220P 50V K
C150,250	OB09393A	CC 68P 50V J
C161,261	OB09281A	CC 150P 50V K
— PB Eq. Amp. —		
Q101,102	OB06142A	TR 2SC2240 (BL)
201,202		
Q103,203	OB01872A	TR 2SC945 (L)
ZD301	OB06233A	ZD 10V RD10EB3
L101,201	OB03919B	Inductor 36mH
VR101,201	OB07418A	Semi-fixed VR 20K
R101,201	OB01684A	RK 470K 1/4W J
R102,202	OB09330A	RK 100K 1/4W J (Noiseless)
R103,203	OB01889A	RK 100K 1/4W J
R104,204	OB05631A	RK 82 1/4W J
R105,205	OB05640A	RK 180K 1/4W J
R106,206	OB05622A	RK 2.2K 1/4W J
R107,207	OB05743A	RK 27K 1/4W J
R108,208	OB09830A	RM 4.87K 1/4W F
R109,209	OB09829A	RM 3.32K 1/4W F
R110,210	OB01680A	RK 820 1/4W J
R111,211	OB01888A	RK 10K 1/4W J
R112,212	OB09263A	RK 12K 1/4W J
R319	OB01857A	RK 1K 1/4W J
C102,202	OB09137A	CE 22μ 25V (LN)
C103,203	OB09283A	CC 220P 50V K
C104,204	OB01836A	CE 47μ 10V
C105,205	OB01863A	CE 3.3μ 50V
C106,206	OB05832A	CM 0.018μ 50V J
C107,207	OB09281A	CC 150P 50V K
C108,208	OB05687A	CM 1200P 50V J

Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description	Schematic Ref. No.	Part No.	Description
C307 CN1	OB01400A OB02242A	CE 100μ 16V 4P-T Post	C133,138 140,154 233,238 240,254 C135,235 C136,236 C137,237 C139,239 C141,241 C142,148 242,248 C143,146 147,243 246,247 322 C144,244 320 C145,245 C149,249 C150,250 C151,251 C152,252 C153,253	OB01412A	CE 10μ 16V	Q608,609 614,615 620,621 Q610,611 616,617 622 ZD601 D601-617 L601 VR601 R601 R602 R603,612 614,649 R604,605 606,629 R607,608 R609,643 R610,611 648 R613 R615 R616,617 618,619 631 R620,621 624,625 R622,623 R626,627 R628 R630 R632 R633 R635 R636 R637 R638 R639 R640 R641 R642,644 R645 R646 R647 R650 R651 C601 C602 C603,605 C604 C607 CN3 CN4	OB06322A	TR 2SC2002
	— DC Supply —			OB09312A	CP 0.01μ 100V G		OB06013A	TR 2SA733
IC401 Q401,402 ZD401 D401 D402,403 R401 R402 R403 R404 R405 C401,402 C403 C404 C405 C406 C407	OB06380A OB01872A OB06167A OB06282A OB01909A OB05575A OB01889A OB05560A OB01887A OB01857A OB09292A OB09799A OB01401A OB09798A OB01392A OB09251A OB08676A OE00507A OE00612A OE00857A OE00037A	IC RC7812 TR 2SC945 (L) ZD 6.2V RD6.2EB3 Diode Bridge DBA10 SID 1S1555 RK 560 1/4W J RK 100K 1/4W J RK 18K 1/4W J RK 5.6K 1/4W J RK 1K 1/4W J CE 0.1μ 50V Z CE 4700μ 25V CE 470μ 25V CE 6800μ 16V CE 470μ 16V CE 33μ 25V Heat Sink (1) Nut Hex. M3 (1) M3x6 ⊕ Pan (2A) (1) BT 3x6 ⊕ Binding (2) Earth Lug B-5 (2)		OB01780A	CM 0.1μ 50V J		OB01888A	RK 10K 1/4W J
	— Bias Osc. —			OB09570A	CE 0.15μ 50V (LN)		OB05625A	RK 220K 1/4W J
Q304 T301 R317 R318 R350 C305 C306 CN2	OB06332A OB06688A OB09263A OB09831A OB09837A OB01403A OB09591A OB02233A	TR 2SB564 (M) Bias Osc. Unit RK 12K 1/4W J RF 22 1W J RF 10 1W J CE 47μ 16V CP 0.01μ 100V J 2P-T Post		OB05682A OB05584A OB09189A OB05687A OB09257A OB09191A	CM 0.068μ 50V J CM 0.22μ 50V J CM 2700P 50V J CM 1200P 50V J CE 2200μ 6.3V CP 4700P 100V G		OB05629A	RK 2.7K 1/4W J
	— Mute —			— Line Amp. —			OB05509A	RK 33K 1/4W J
IC301 Q301 Q302 Q303 D301,302 303,304 R301,308 311 R302,312 322 R303,306 307,309 310,315 R304,313 314,321 R305 R316 C301,304 C302,303 RL301	OB06381A OB06332A OB01872A OB06155A OB01909A OB05509A OB05626A OB01889A OB01888A OB05627A OB05776A OB01405A OB09327A OB07420A	IC μPD4011BC TR 2SB564 (M) TR 2SC945 (L) TR 2SA733 (P) SID 1S1555 RK 33K 1/4W J RK 150K 1/4W J RK 100K 1/4W J RK 10K 1/4W J RK 330K 1/4W J RK 1M 1/4W J CE 1μ 50V CE 0.33μ 50V (LN) Relay 12V	IC302 R150,151 250,251 R152,252 R162,262 R163,263 R164,264 R360,361 C126,226 C128,228 C129,229 C327 IC304 Q108,208 R165,265 R166,266 R167,168 267,268 R170,270 R171,271 R342 C130,230 C131,231 C323 Q105,106 107,205 206,207 ZD101,201 D101,102 201,202 305 VR108,208 R141,241 R142,145 146,242 245,246 R143,243 R144,244 R147,148 247,248 R149,249 R320 C124,224 C125,225 C308 IC601 Q601,618 Q602,603 Q604,605 619,623 624,625 Q606,607 612,613	OB06124B OB01889A OB01857A OB05615A OB09263A OB05621A OB05626A OB01405A OB01836A OB01412A OB05885A OB06370A OB06299A OB05622A OB01682A OB01889A OB05579A OB01857A OB09049A OB09327A OB01398A OB01400A OB01872A OB06384A OB01909A OB07425A OB05509A OB01889A OB05784A OB05626A OB05508A OB05615A OB09216A OB09570A OB09148A OB01400A OB06367A OB06214A OB06066A OB06371A OB01872A OB06372A	IC RC4558D RK 100K 1/4W J RK 1K 1/4W J RK 22K 1/4W J RK 12K 1/4W J RK 120K 1/4W J RK 150K 1/4W J CE 1μ 50V CE 47μ 10V CE 10μ 16V CE 100μ 10V IC RC4556D TR 2SC2878 RK 2.2K 1/4W J RK 6.8K 1/4W J RK 100K 1/4W J RK 22 1/4W J RK 1K 1/4W J RF 22 1/4W J CE 0.33μ 50V (LN) CE 220μ 16V CE 100μ 16V TR 2SC945 (L) ZD 5.5V XZ055 SID 1S1555 Semi-fixed VR 100K RK 33K 1/4W J RK 100K 1/4W J RK 560K 1/4W J RK 150K 1/4W J RK 56K 1/4W J RK 22K 1/4W J RF 10 1/4W J CE 0.15μ 50V (LN) CE 10μ 25V (LN) CE 100μ 16V IC TMP4315BP-1811 μPD4071C TR 2SD471 (L,M) TR 2SD1286 TR 2SC945 (L) TR 2SA953		OB01684A	RK 470K 1/4W J
	— Dolby NR —			— Headphone Amp. —			OB01933A	RK 220 1/4W J
IC101,201 IC102,202 L104,204 L105,205 R173,273 R174,274 R175,275 R176,276 R178,278 R180,280 R181,281 R182,282 R184,284 R185,285 R186,286 R187,190 287,290 R188,189 288,289 R191,291 R340 C132,134 232,234	OB06383A OB06382A OB06691A OB06690A OB05629A OB09826A OB09588A OB09317A OB09491A OB05692A OB09795A OB09420A OB09356A OB05641A OB09517A OB05627A OB05676A OB09796A OB01889A OB09223A	IC TEA0654 IC TEA0652 L-C Block YEL L-C Block BLU RK 2.7K 1/4W J RK 3K 1/4W J RK 2.4K 1/4W J RM 3.3K 1/4W F RM 1K 1/4W F RK 68K 1/4W J RM 5.1K 1/4W F RM 2.2K 1/4W F RM 4.7K 1/4W F RK 47K 1/4W J RK 75K 1/4W J RK 330K 1/4W J RK 390K 1/4W J RM 12K 1/4W F RK 100K 1/4W J CE 1μ 50V (LN)		— Meter Amp. —			OB05575A	RK 560 1/4W J
				— Logic —			OB09217A	RF 5.6 1/4W J
							OB01889A	RK 100K 1/4W J
							OB05627A	RK 330K 1/4W J
							OB05641A	RK 47K 1/4W J
							OB05508A	RK 56K 1/4W J
							OB01856A	RK 8.2K 1/4W J
							OB06706A	RW 3.5
							OB01398A	CE 220μ 16V
							OB09817A	CE 33μ 10V (LN)
							OB01405A	CE 1μ 50V
							OB09222A	CE 0.47μ 50V (LN)
							OB01802A	CM 2200P 50V J
							OB02243A	5P-T Post
							OB02245A	9P-T Post
							— Miscellaneous —	
							OB02563A	Main P.C.B.
							OB02249A	PD Wire (1)
							OB02250A	PD Wire (1)
							OB02251A	PD Wire (1)
							OB02255A	PD Wire (1)
							OB02260A	PD Wire (1)
							OB02261A	PD Wire (1)
							OB02262A	PD Wire (1)
							OB02264A	PD Wire (1)
							OB02265A	PD Wire (1)
							OB02266A	PD Wire (1)
							OB02267A	PD Wire (1)
							OB02269A	PD Wire (1)
							OJ04613A	Shield Plate M (1)
							OB07434A	Push Switch (1)
							OB07436A	Push Switch (1)
							OE00509A	M3x6 ⊕ Pan (3)

7. SCHEMATIC DIAGRAMS

7.1. Attention to Servicemen

(1) Parts Replacement

Following parts shall be replaced with the specified ones.
Refer to the parts list.

(a) Power Supply Circuit

Power Cord
Power Transformer: T1
Fuses: F401, 402

(b) Power Switch P.C.B. Ass'y

Power Switch: SW1
Spark Killer: M2

(c) Main P.C.B. Ass'y

Power Transistors: Q301, 304, 601, 602, 603, 606, 607,
608, 609, 612, 613, 614, 615, 618, 620, 621
Diode Bridge: D401
Relay: RL301
Fail Safe Type Resistors: R318, 320, 342, 350, 401, 632,
639, 641
Wire Wound Resistor: R651

(2) Insulation Check

Before returning the repaired BX-2 to a customer, check to insure that the exposed part is accurately insulated from the AC line by measuring the leakage current or the insulation resistance between them.

7.2. IC Block Diagrams

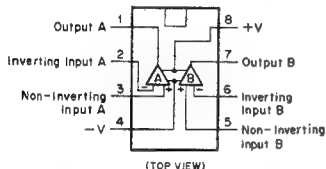


Fig. 7.2.1 Operational Amp. IC 4558, 4556

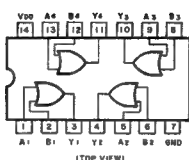


Fig. 7.2.3 OR Gate C-MOS IC μPD4071BC

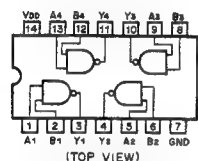


Fig. 7.2.2 NAND Gate C-MOS IC μPD4011BC

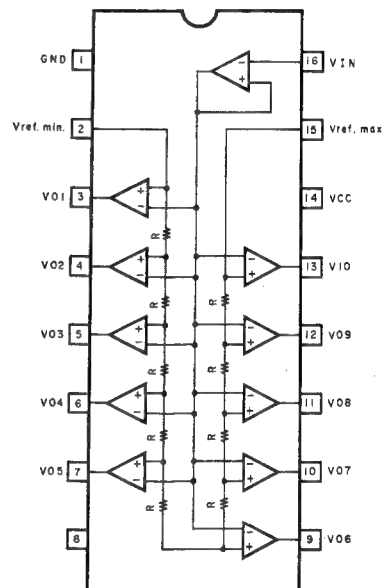


Fig. 7.2.4 Level Meter Driver TA7612AP

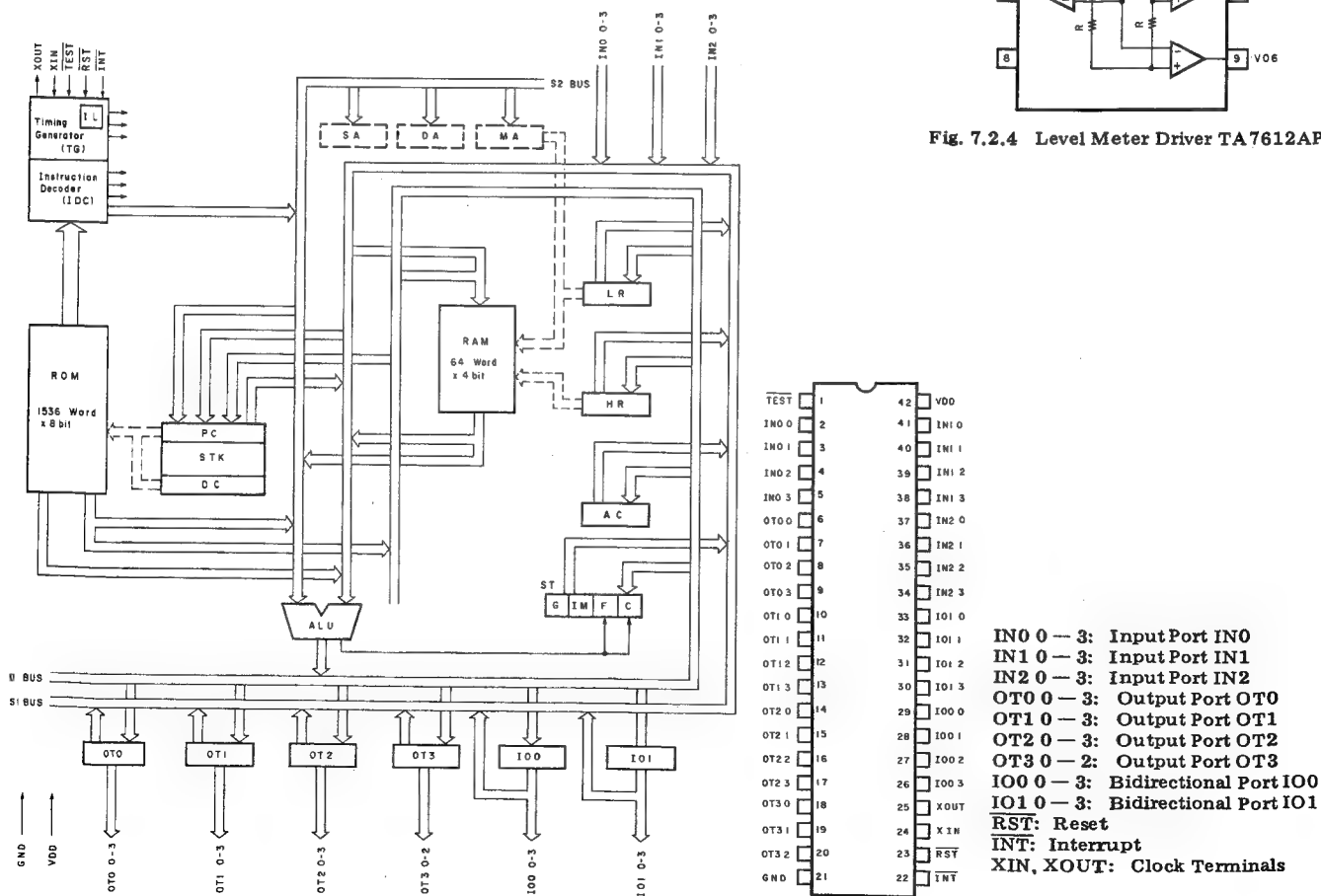


Fig. 7.2.5 4-Bit Micro-processor TMP4315BP-1811

7.3. Schematic Diagrams

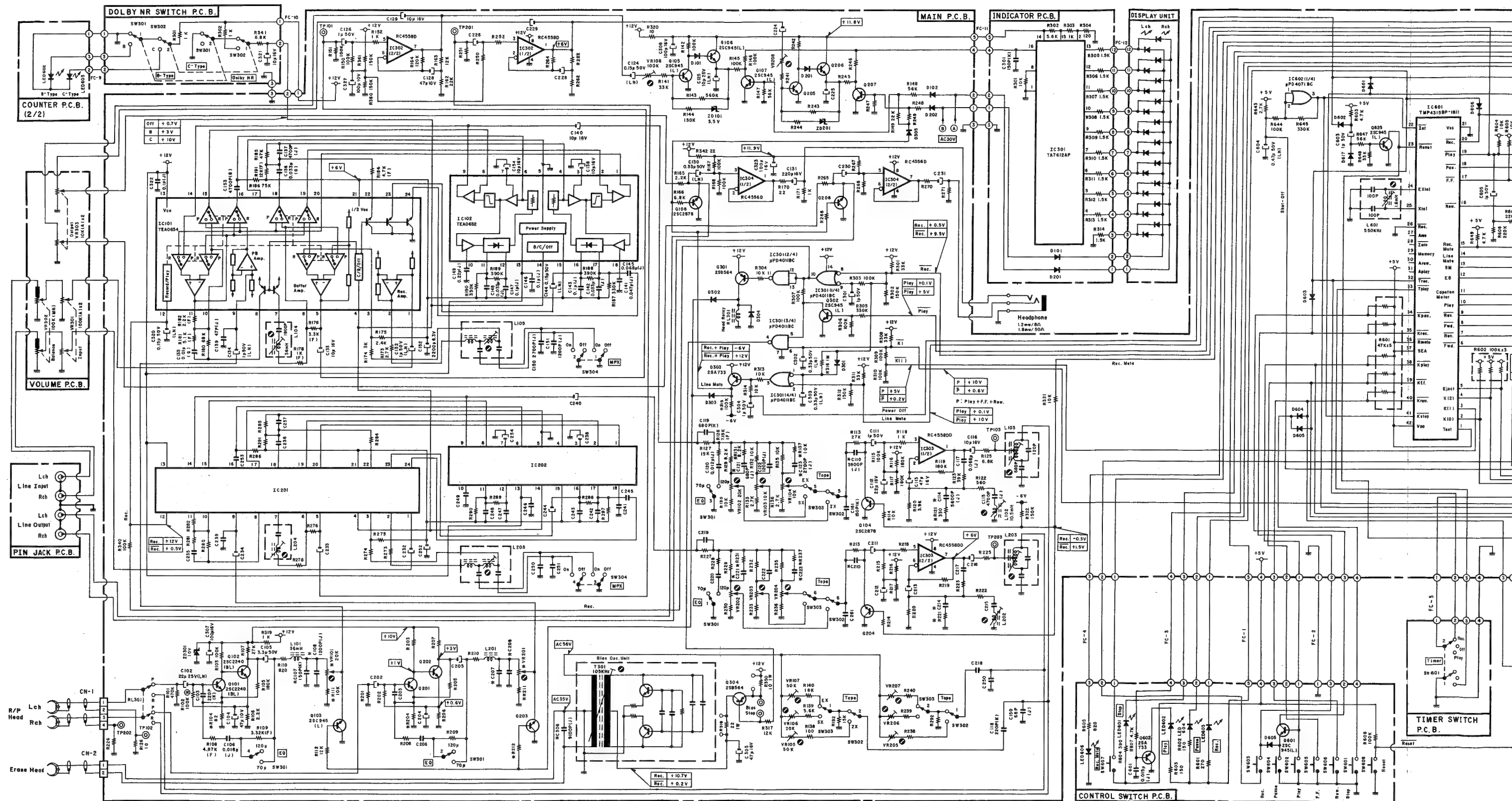


Fig. 7.3.1 2nd Version

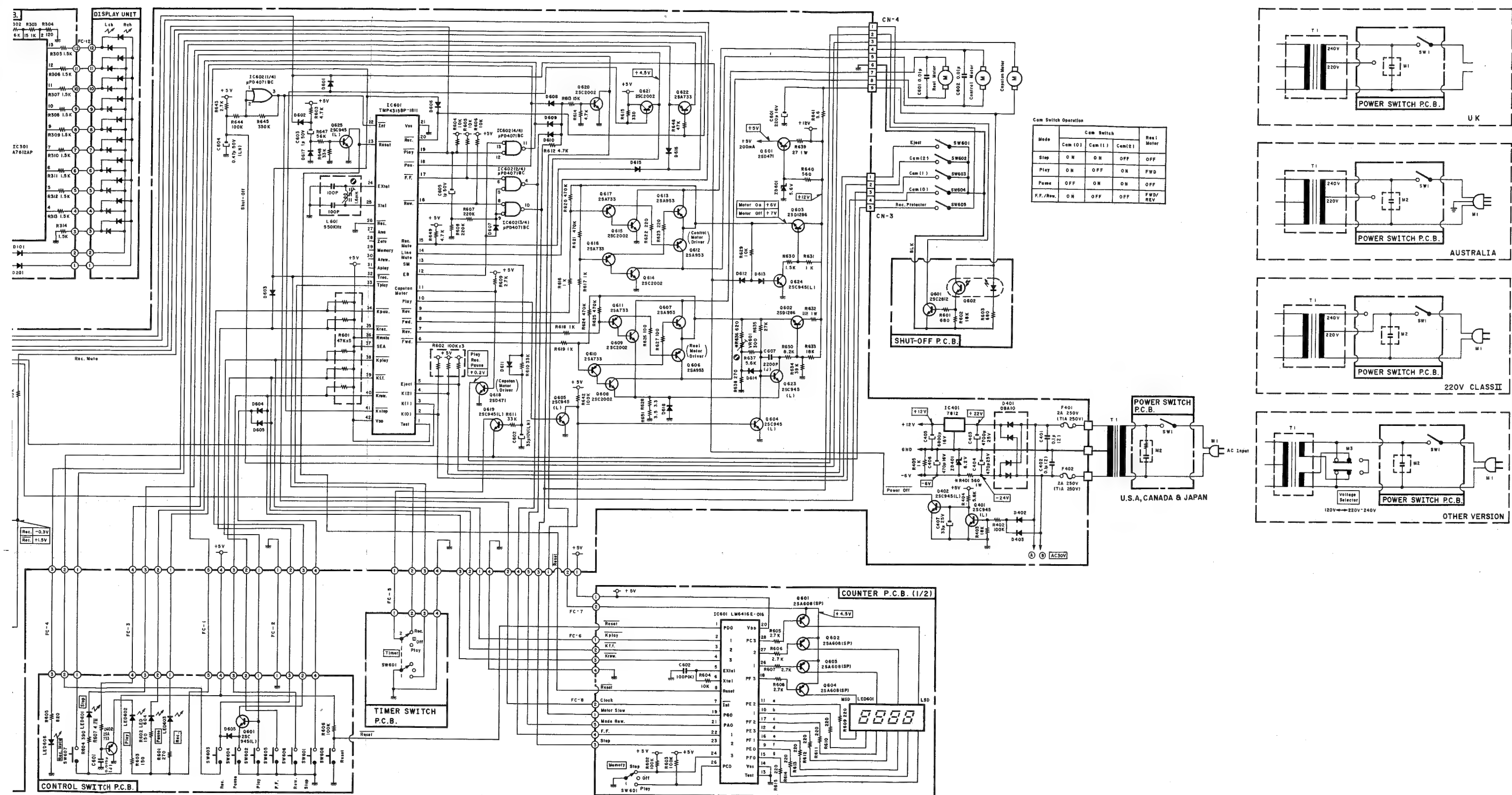


Fig. 7.3.1 2nd Version

Notes: 1. Diode is 1S853, 1S953, or 1S1555 unless otherwise specified.
2. Resistor and capacitor marked with * show typical value.

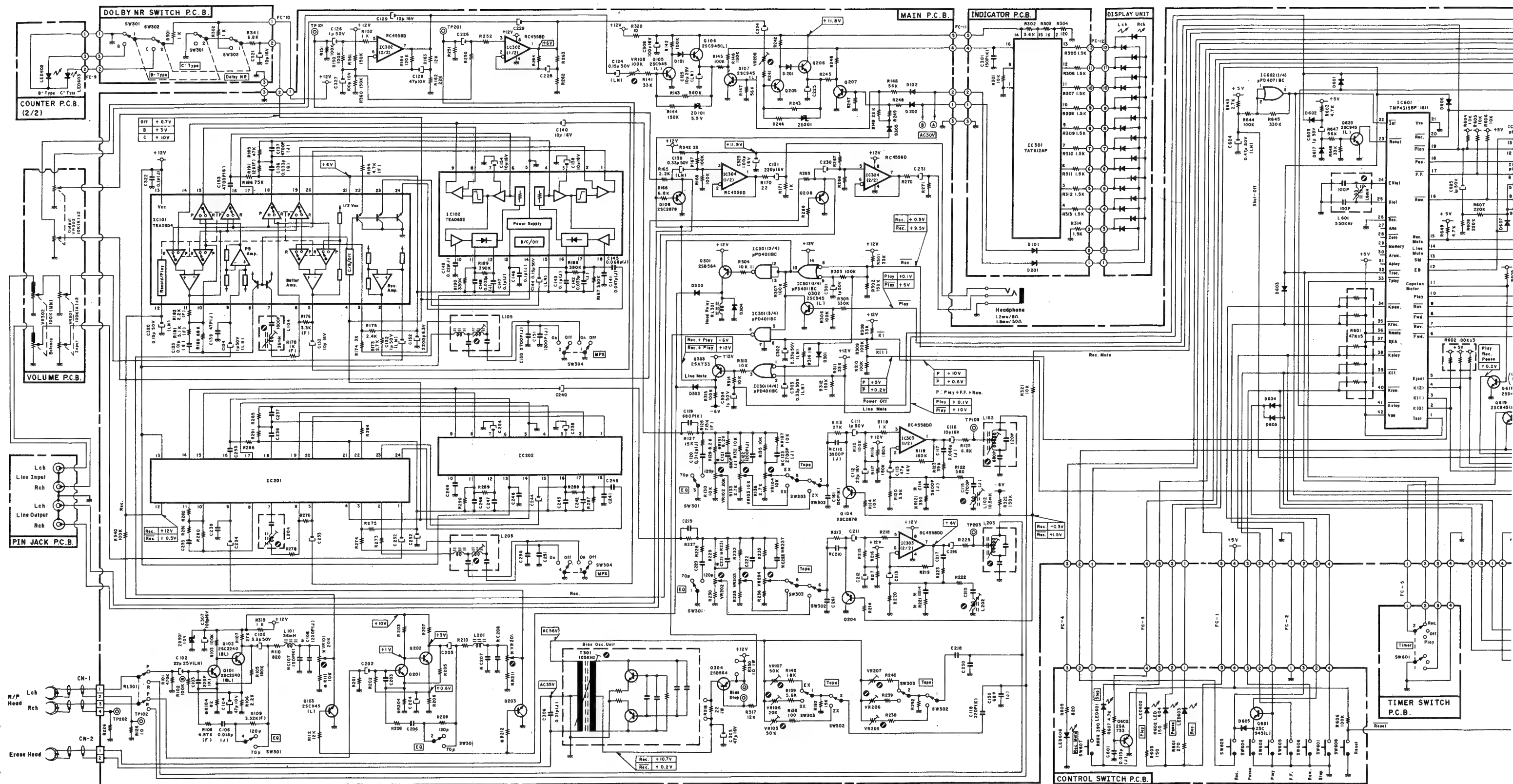


Fig. 7.3.2 1st Version

8. TIMING CHART AND EQ. AMP. FREQUENCY RESPONSE

8.1. Timing Chart

(1) Overall Timing Chart

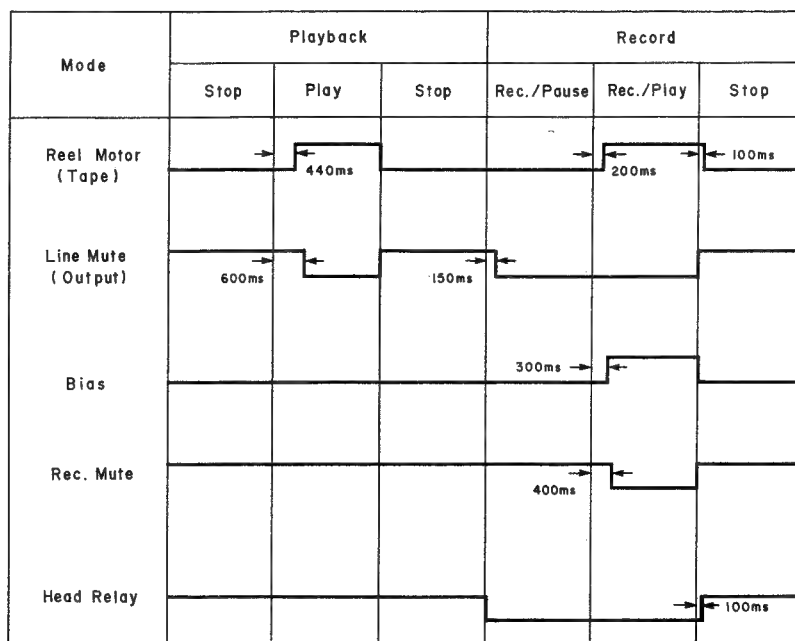


Fig. 8.1.1

(2) Mechanism Control Timing Chart

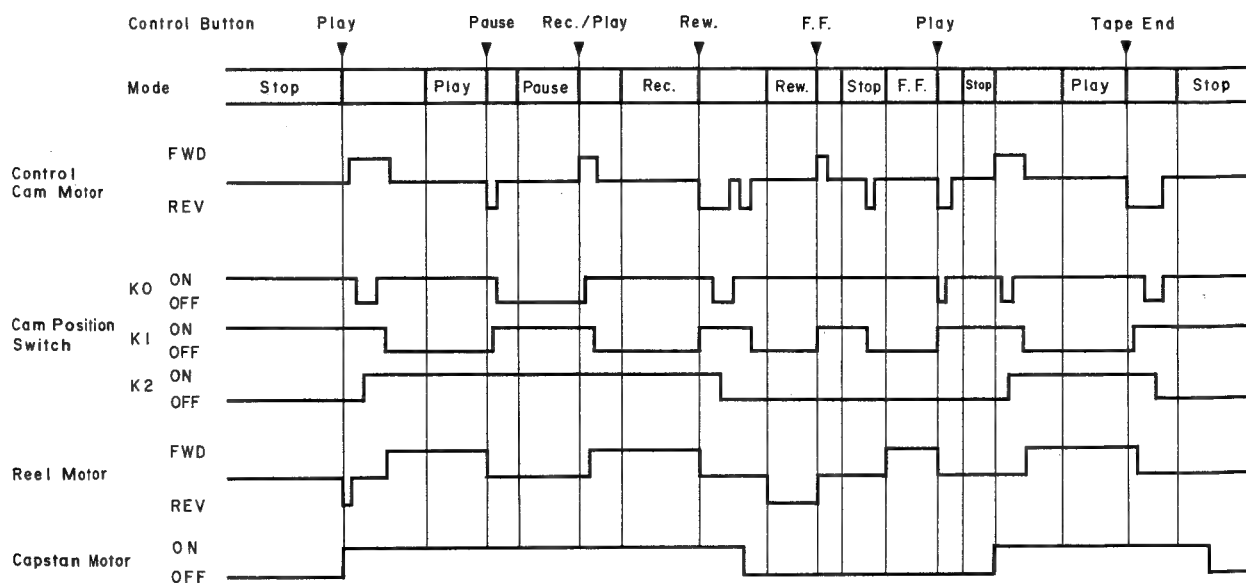


Fig. 8.1.2

8.2. Eq. Amp. Frequency Response

(1) Playback Frequency Response

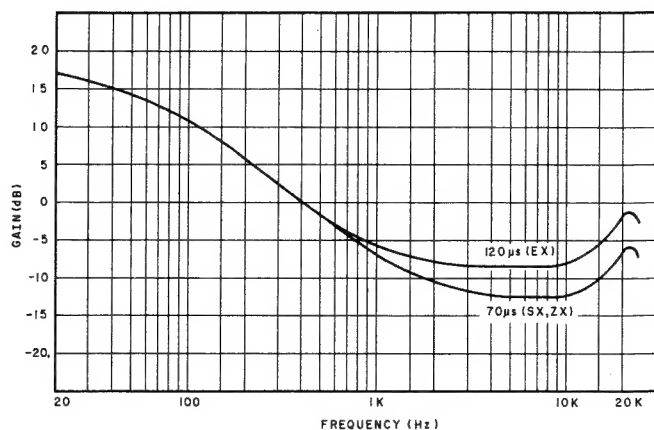


Fig. 8.2.1

(2) Record Current Frequency Response

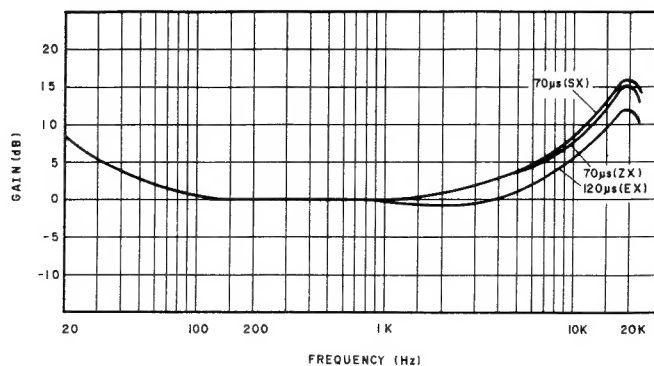


Fig. 8.2.2

Notes: 1. Table of wire colors

BLK — Black
BRN — Brown
RED — Red
ORN — Orange
YEL — Yellow
GRN — Green
BLU — Blue
VIO — Violet
GRY — Gray
WHT — White

2. Component side view of the P.C.B. is illustrated unless otherwise specified.

3. *: Wiring is not made for the 1st version.

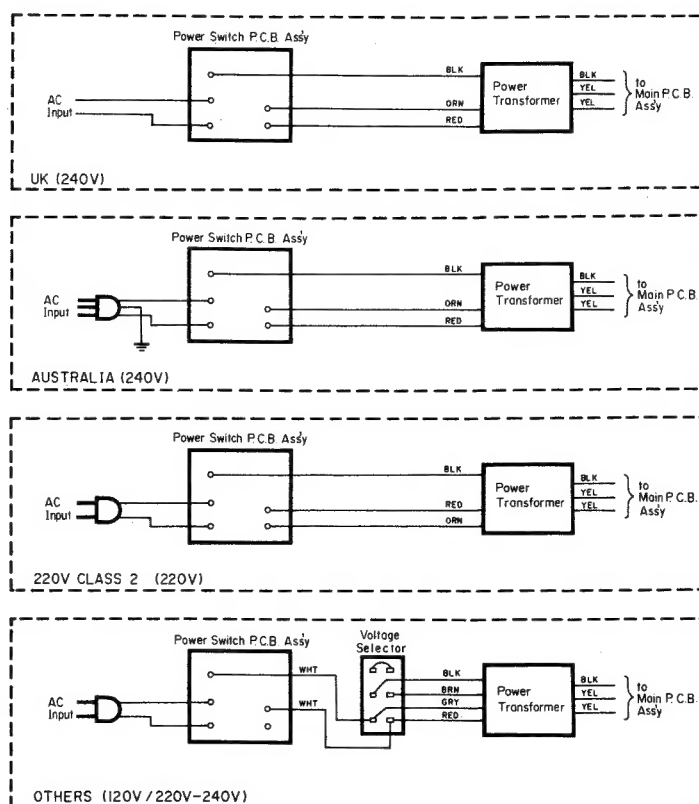


Fig. 9.1

9. WIRING DIAGRAM

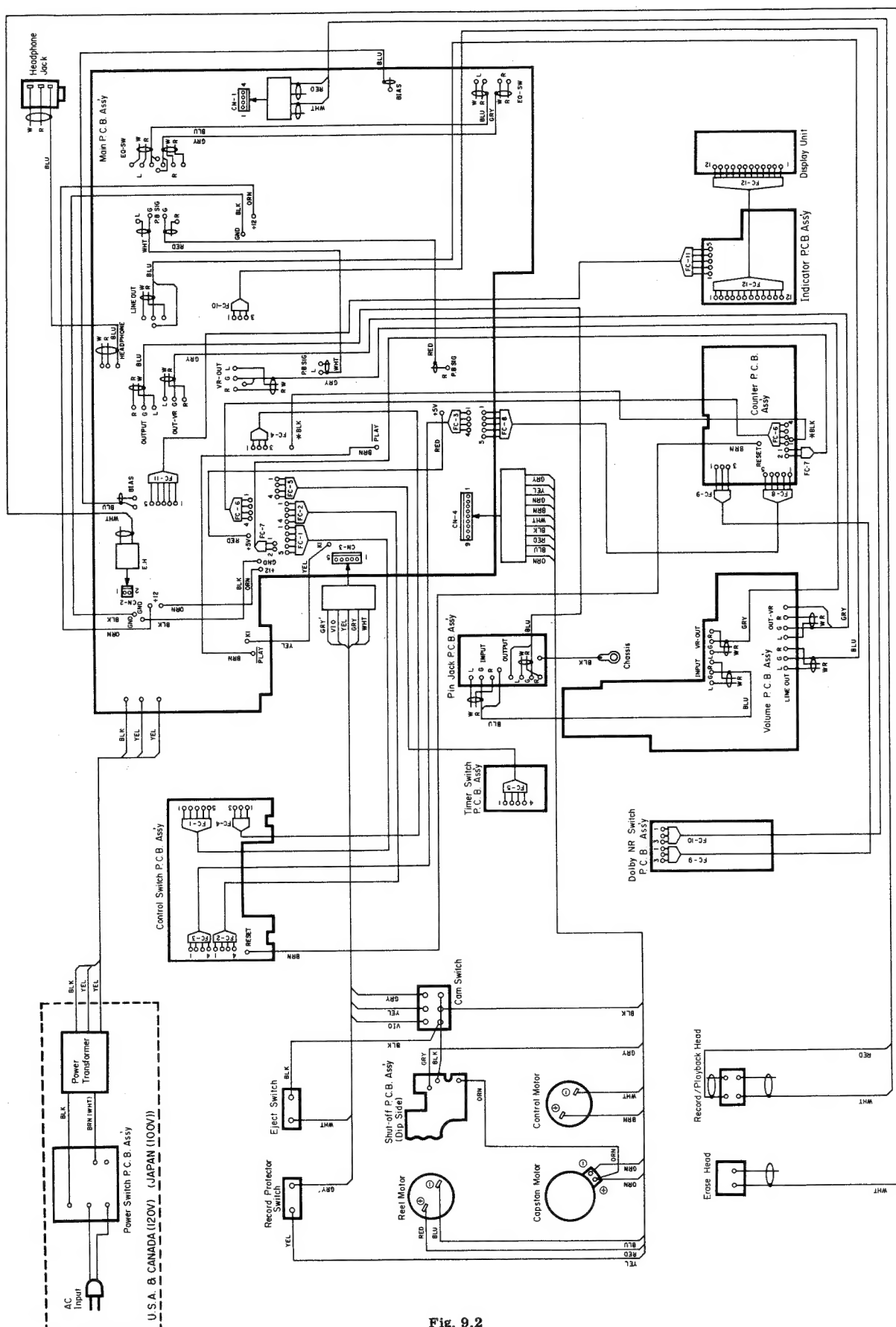


Fig. 9.2

10. BLOCK DIAGRAMS

10.1. Amplifier Section

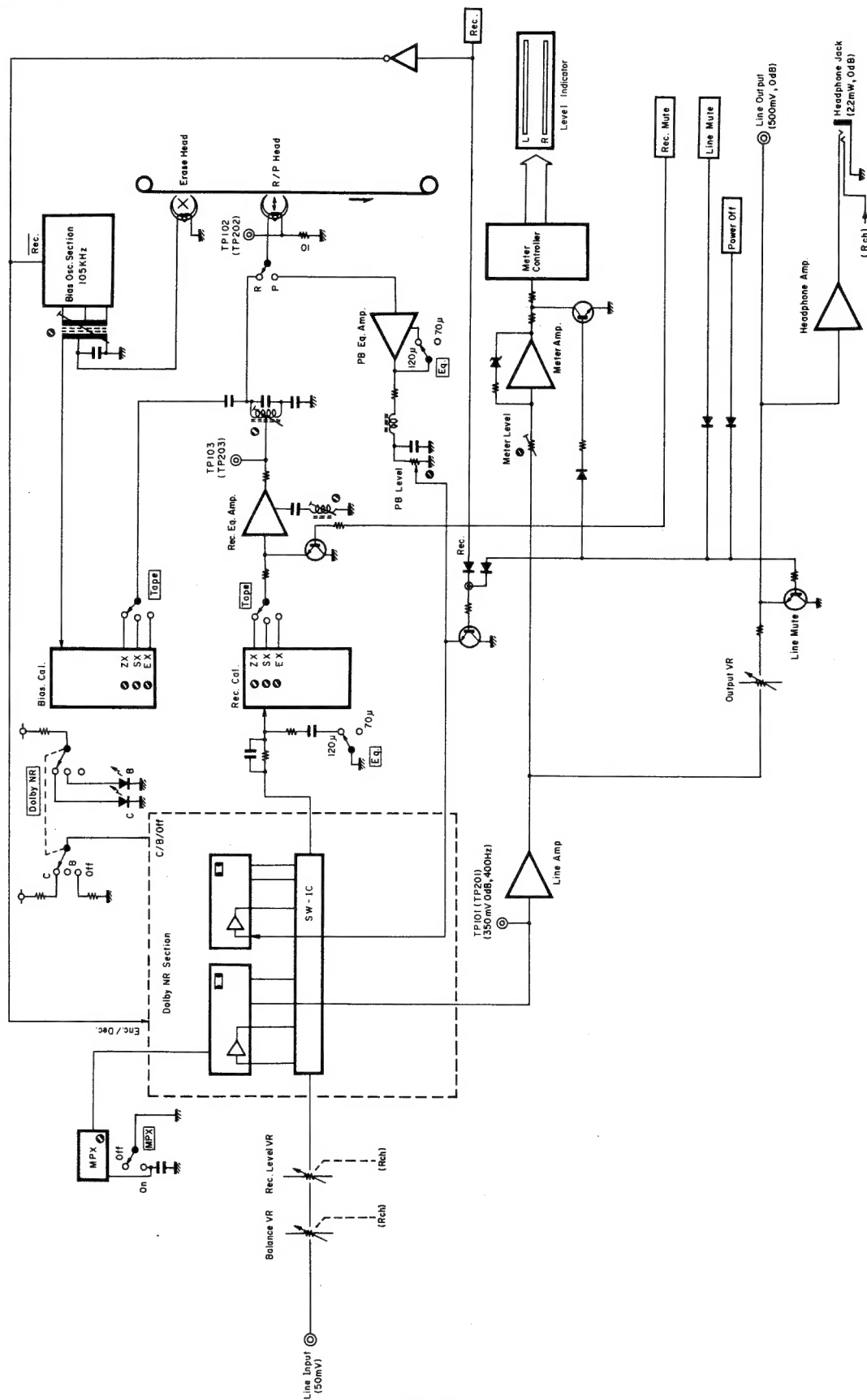


Fig. 10.1

10.2. Mechanism Control Section

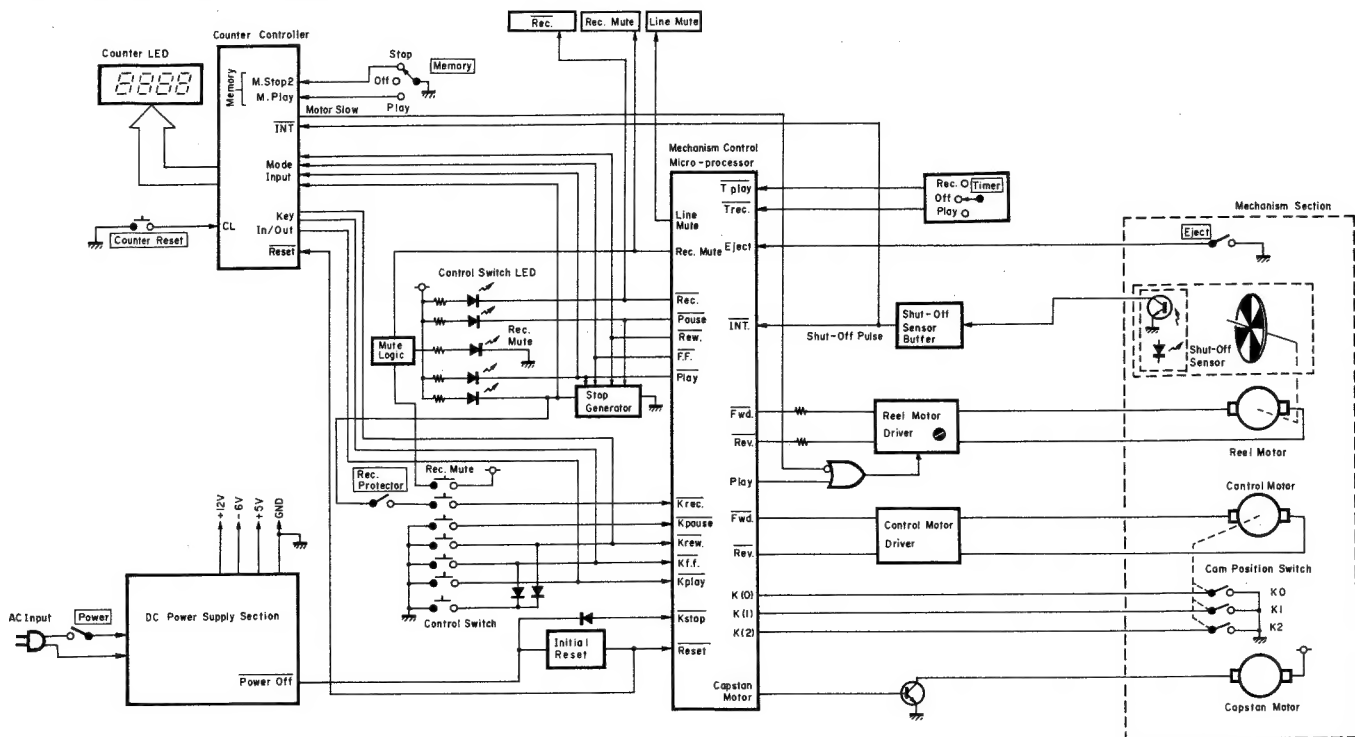


Fig. 10.2

11. SPECIFICATIONS

Track Configuration	4 Tracks/2-Channel Stereo
Heads	2 (Erase Head x 1, Record/Playback Head x 1)
Motors (Tape Transport)	DC Servo Motor (Capstan Drive) x 1 DC Motor (Reel Drive) x 1
Power Source	100, 120, 120/220-240, 220 or 240 V AC; 50/60 Hz (According to country of sale)
Power Consumption	23 W max.
Tape Speed	1-7/8 ips (4.8 cm/sec) $\pm 0.5\%$
Wow and Flutter	Less than 0.11% Wtd peak Less than 0.06% Wtd rms
Frequency Response	20 Hz—20,000 Hz (recording level —20 dB)
Signal to Noise Ratio	Dolby C-Type NR on <70 μ s, ZX tape> Better than 68 dB (400 Hz, 3% THD, IHF A-Wtd rms) Dolby B-Type NR on <70 μ s, ZX tape> Better than 62 dB (400 Hz, 3% THD, IHF A-Wtd rms)
Total Harmonic Distortion	Less than 1.0% (400 Hz, 0 dB, ZX, EXII tape) Less than 1.2% (400 Hz, 0 dB, SX tape)
Erasure	Better than 60 dB (100 Hz, 0 dB)
Separation	Better than 36 dB (1 kHz, 0 dB)
Crosstalk	Better than 60 dB (1 kHz, 0 dB)
Bias Frequency	105 kHz
Input (Line)	50 mV, 30 k ohms
Output (Line)	0.5 V (400 Hz, 0 dB, output level control at max.) 2.2 k ohms
(Headphones)	2.2 mW (400 Hz, 0 dB, output level control at max.) 8-ohm load
Dimensions	430 (W) x 110 (H) x 250 (D) millimeters 16-15/16 (W) x 4-5/16 (H) x 9-7/8 (D) inches
Approximate Weight	5.5 kg 12 lb. 2 oz

- Specifications and appearance design are subject to change for further improvement without notice.
- Dolby NR under license from Dolby Laboratories Licensing Corporation.
- The word “DOLBY” and the Double-D-Symbol are trademarks of Dolby Laboratories Licensing Corporation.